American Perfumer AND AROMATICS

COSMETICS
TOILETRIES
SOAPS
•
PHARMACEUTICALS
FOODS
FLAVORING
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•
ESSENTIAL OILS

FEBRUARY 1956

THE MAGAZINE OF TASTE AND SCENT

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gress in Perfumery . . . Page 31 • Flavor Materials Production . . . Page 61

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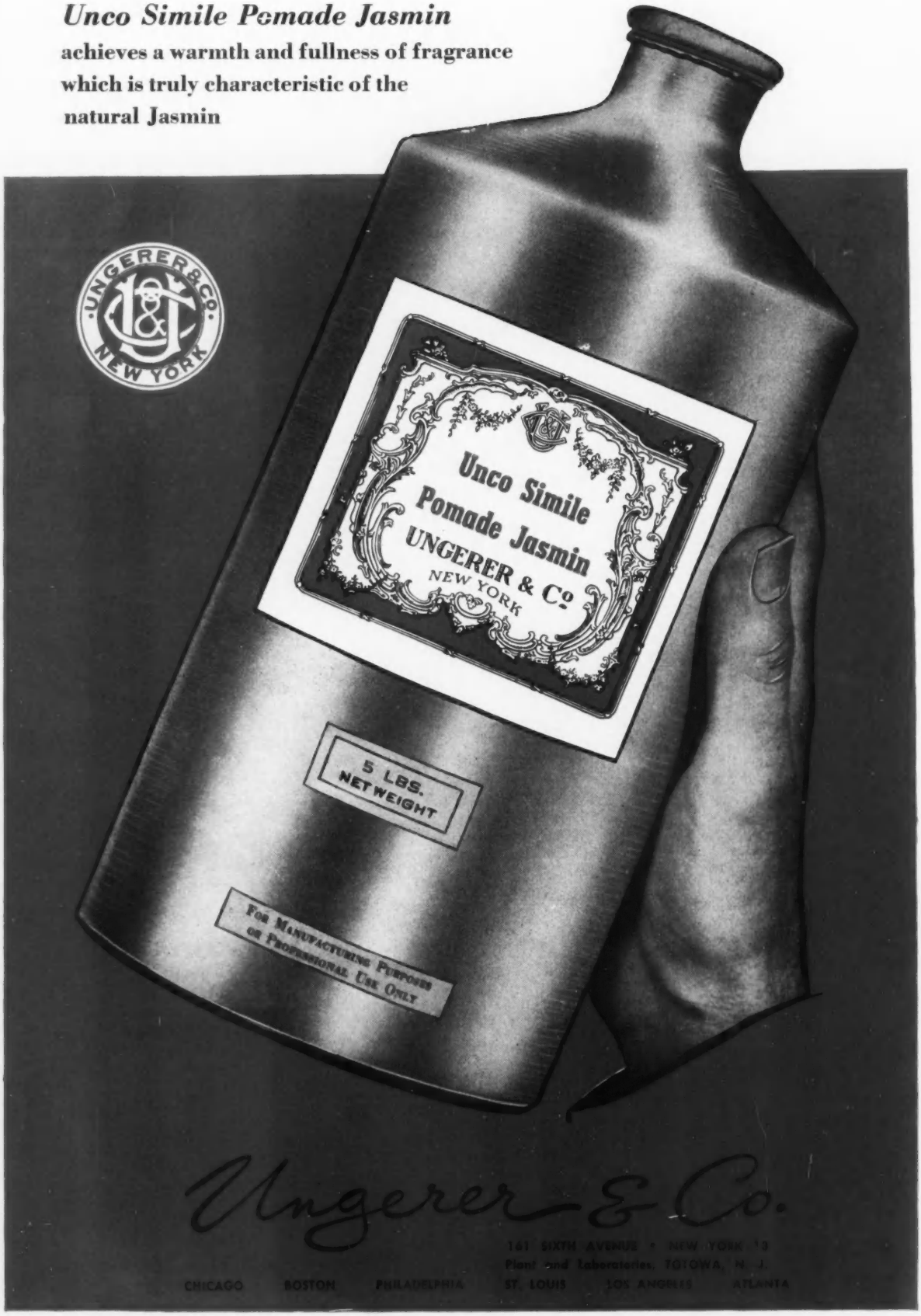

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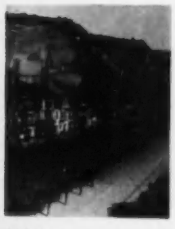

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LATE MINUTE NEWS . . .

William T. Haebler of van-Ameringen-Haebler Dies

William T. Haebler, vice president, treasurer, a director and a co-founder of van Ameringen-Haebler, Inc. died from a heart attack February 6 in St. Marys hospital, West Palm Beach Florida. He was 55 years of age.

Mr. Haebler was graduated from Massachusetts Institute of Technology and took his doctor's degree at the University of Zurich.

With Arnold L. van Ameringen he founded the essential oil and aromatic chemical firm of van Ameringen-Haebler when Mr. van Ameringen combined his business with that of Morana, Inc., which was acquired by them.

Mr. Haebler was a trustee of Goucher College and the New Rochelle Hospital, and was a member of the Chemists, the Union League, the Lake Placid, Shenrock, and Pelham Country clubs. He made his home in Pelham Manor, N. Y. and also had a residence in Milwaukee, Wisc.

He is survived by his wife, three daughters and a granddaughter.

In the years Mr. Haebler was associated with the industry he won a host of friends for his high standards of doing business, his charming personality and his kindness.

Hetzel to Speak at New York Chapter of S.C.C.

Carl Hetzel, of Charles Pfizer & Co., technical service division, will be the speaker at the February 29 meeting of the New York Chapter of the Society of Cosmetic Chemists in the Brass Rail Restaurant, Fifth Ave. near 43rd St., New York City. His subject will be "New Tropical Antibiotic and Cortica-Steroid Developments," a subject that should interest all members. Interested non-members are invited to attend the open meeting.

Oregon Essential Oil Growers League Meets

About 250 growers and distillers of essential oils in Oregon, representing 85% of the oil produced, discussed at its annual meeting research on the control of various insects and diseases of essential oil plants in the Northwest. Other topics of importance concerned the best types of fertilizers to use and improvements in distillation equipment in order to produce better quality oils. The growers and distillers in the League by working together have been very successful in solving many problems regarding the industry. John Whipple, president, presided. The annual banquet was held in the Memorial Union Tearoom on the Oregon State College campus. Richard Sulmonetti, circuit judge of Multnomah County, was guest speaker. Professional entertainment followed.

Michigan Assn. Elects New Officers for 1956

The Chemical & Allied Industries Assn. of Michigan has elected the following officers for this year: President, M. Lorne Morrison, R. P. Scherer Corp.; Vice President, J. Glen Hicks, Monsanto Chemical Co.; Treasurer, William F. Harlton Jr., Detroit Veterinary Supply Co. and Secretary, Daniel F. Bradley, Shell Chemical Co.

Coca Cola Testing New Flavors for Soft Drinks

After sticking to its highly successful formula developed 70 years ago the Coca Cola Co. is testing new flavors for soft drinks. The consumption of bottled soft drinks has shown a marked increase and the purpose is reported to fill a broader need for drinks for home consumption. The profits of the company in 1955 were about $28,000,000 net.

Lever Bros Co. Launches New Instant Detergent

A new instant liquid detergent, Whisk, was launched in four midwest markets this month by the Lever Bros. Co. It is a heavy duty laundry item and is a blue liquid and is sold in a can. Seven years of research went into the creation of the new product.

Customer of Wholesaler Is Not a Purchaser

A retailer who purchases goods from a wholesaler and does not deal directly with a manufacturer is not a "purchaser" under the terms of Sec. 1 of the Robinson-Patman act according to a decision of the Federal District Court in Delaware. If a retailer purchases all of his goods from a jobber he is not a purchaser from the manufacturer and cannot complain that the manufacturer is discriminating against him in price.

By 1960 There May be 25,000 Supermarkets

By 1960 there will probably be 25,000 supermarkets in the United States according to a report to the National Food Brokers Assn. by R. W. Mueller. In 1955 there were 21,440 supermarkets which accounted for 53.5% of total food market sales. Cosmetic manufacturers who are selling through supermarkets are not over enthusiastic about this outlet because the supermarkets are asking for larger discounts and allowances.

Sodium Fluoride Tooth Powder Sale Approved

Sodium fluoride tooth powder has been approved by the Food & Drug Administration for over the counter sale.

Food Processing Firms Undertake Flavor Research

Advertising Agency magazine published the following significant item in its February 3 issue: Food processing firms have come up with a new form of research which can augur a vast change in that business. It is flavor research, and such giants in the field as General Foods, Standard Brands, H. J. Heinz, and Borden are tackling the problem. The research is being carried out by Sensory Testing Panels. Experts report that while taste buds vary in their ability to pick up tastes, depending on individuals and age, more than 10,000 different odors can be detected. The possible combinations run into the billions. While manufacturers are concerned with the taste of their products, from the point of view of the consumer, they also are concerned with cost. For instance, one chili producer succeeded in isolating the ingredient which gave his product a snappy flavor. Having done this, he found a substitute flavoring, producing the same taste result, but at a substantial saving. As one food executive put it: "We are going to put heavy stress on flavor research because we believe it will have a profound effect on our business."

Dental Association Hits Fluoride Dentifrices

All fluoride dentifrices are being marketed prematurely according to the American Dental Assn. which on February 1 took an official position on the newest class of dentifrices. In a statement issued by Dr. Harold Hillenbrand, secretary of the association, he said that the association is not aware of evidence adequate to demonstrate the claimed dental caries prophylactic value of fluoride dentifrices. "Although clinical tests are in progress sufficient evidence concerning their value may not be available for a year or more. It would be a disservice to the dental health of the public if the promotion of fluoride dentifrices should lead to the misconception that their use is an adequate substitute for the controlled fluoridation of municipal water supplies."

Allen B. Wrisley Co. Buys Iowa Soap Co.

The Allen B. Wrisley Co., Chicago, has purchased the Iowa Soap Co., Burlington, Iowa, and will operate it as a division under the supervision of James Bolen, formerly vice president of Iowa Soap Co., who becomes vice president of Wrisley. The Iowa Soap Co. has been in operation since 1881.

Rudolf Zellenka, Pest Control Expert, Is in U. S.

Rudolph Zellenka, Zellenka & Co., Vienna, Austria, manufacturer of insecticides, is in the United States for an indefinite period to study American manufacturing methods. Mr. Zellenka has his own process for pest control; anyone interested is invited to consult him. He is making his headquarters with Felton Chemical Co., 599 Johnson Ave., Brooklyn 37, N. Y.

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Editorials . . .

Conflicting Association Conventions. . . .

It is to be deplored that the annual conventions of the Toilet Goods Assn. and the Flavoring Extract Manufacturers Assn. both occur during the same week in May. The Flavoring Extract Manufacturers Assn. meets May 14, 15 and 16 in Atlantic City and the Toilet Goods Assn. meets in New York May 15, 16 and 17. Thus there are two—perhaps the most important—overlapping days. This is unfortunate because it will reduce the attendance at both big meetings. Most of the suppliers of raw materials attend both meetings each year and the burden of dividing their time between the two or omitting one in favor of the other is upon them with a measure of irritation in either event. It is to be hoped that in future, collisions in the convention dates of both of these important associations may be obviated.

Battle Report . . . .

The complete figures on the *Battle of the Noses* are not in as we go to press. But we're happy to report an enthusiastic response to our olfactory classic, which was instituted last month. It's heartening to know that our readers are ready and willing to put their noses to it. The perfume . . . Stradivari by Prince Matchabelli.

Business Can Relieve an Unsound Condition. . . .

The purchasing power of the dollar has shrunk nearly 50% in the last 15 years according to a Boston bank which points to the retail prices in 1941 for bread, cigarettes, automobiles and other consumer items as compared with those of today. Moreover prices are still going higher across the board. Consumer mortgage and installment debt is now at an all time high. In fact consumers and corporations have record debts. Washington is disturbed by this rising tide of debt in this period of business prosperity. The public and credit managers are blamed for the unsound conditions because they reduced credit to a cheap basis. Almost everybody is encouraged to buy on credit. While inflation is an international malady only the British have so far taken the inflation bull by the horns to stop it from running wild. It has set up curbs on consumer credit buying of automobiles, television sets and other items. Holland will soon announce credit curbs. The United States hasn't yet taken comparable action. Washington is watching to see if the British can curb inflation because an economic slide in Britain might be dangerous; for it could upset a badly unbalanced European economy. On the other hand, if consumers everywhere are restrained from buying on credit will manufacturers be able to sell their products in sufficient quantities? Fewer sales would mean some reduction in production. Some reduction in production would mean some unemployment; and unemployment means reduced purchasing power. The longer the present condition of runaway prices continues the more severe the reaction is likely to be in the end. If that is to be avoided a gradual tightening of credit by business itself might be helpful.

Food Additive Bills. . . .

It should be noted that the titles of the two identical bills introduced in Congress by Representatives O'Hara and Priest (HR 8271 and HR 8275) have been changed from "chemical additive bills" to "food additive bills." In part they prohibit the use of new food additives unless they have been adequately pretested to establish their use and also their usefulness to the public and must not be deleterious or injurious to health.

The burden of establishing by pretesting to the satisfaction of the Secretary of the Department of Health, Education and Welfare that the additives are not injurious to health is on the manufacturer. It should be noted that these restrictions are not applicable to food additives now in general use but only to new ones used after the bill has been enacted into law.

Under the terms of the bills the data on the new food additives to be submitted to the Secretary include: chemical identity and composition, conditions of intended use, methods used in testing quality and identity, methods available for determining the identity and quantity of the additives; report of the pretesting investigation to determine whether the food additive is safe for use and samples of the new additive and component articles are requested by the Secretary.

Furthermore, after evaluation of the new additive has been completed by the Secretary he shall render an opinion as to whether the additive has been adequately pretested. In the event of an adverse opinion the right to institute an action under the Declaratory Judgments Act is provided for.

The provisions of the bills are contrary to the position of the officials of the Food & Drug Administration, who feel that specific and sole authority should be granted to them to determine whether or not food additives are deleterious or injurious to health. Opinion in the trade appears to be in accordance with this viewpoint.

A New Idea in Sales Meetings. . . .

Instead of the usual practice of calling in all sales personnel to company headquarters for a round of pep talks and an opportunity to meet the executives of the company the Todd Co. of Rochester, N. Y. has adopted a different method. Its officials go into the field to visit their employes and to help carry out sales campaigns. The chief executives make sales calls throughout the territory and in addition to offering suggestions undertake direct sales work with their regular salesmen. In this way they impress on their salesmen the interest that the officials of the company have in helping them and the officials in turn also learn much about the problems the salesmen have to meet.

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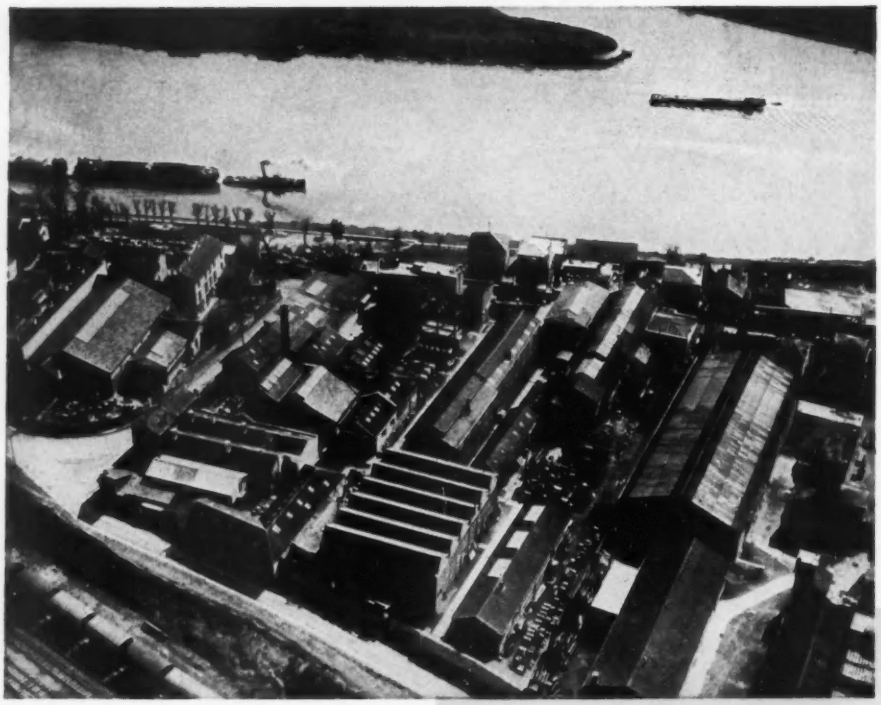

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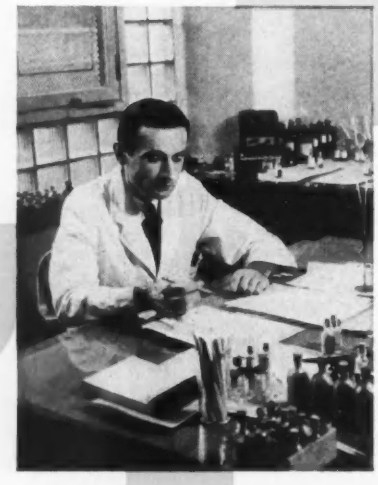

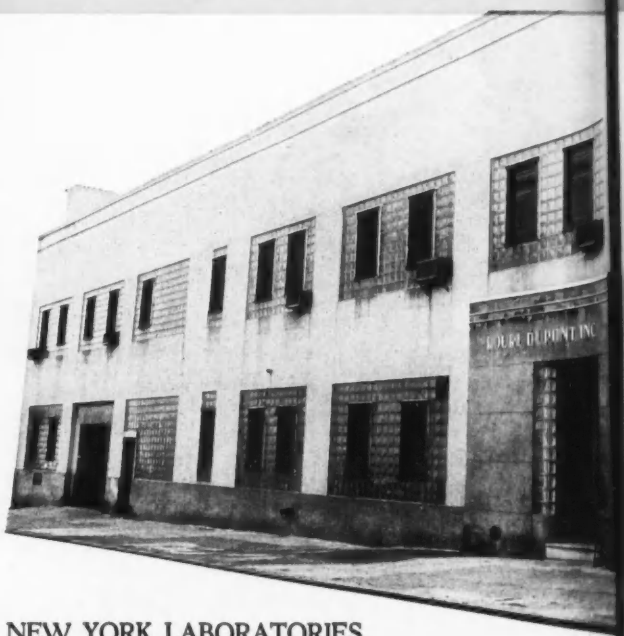

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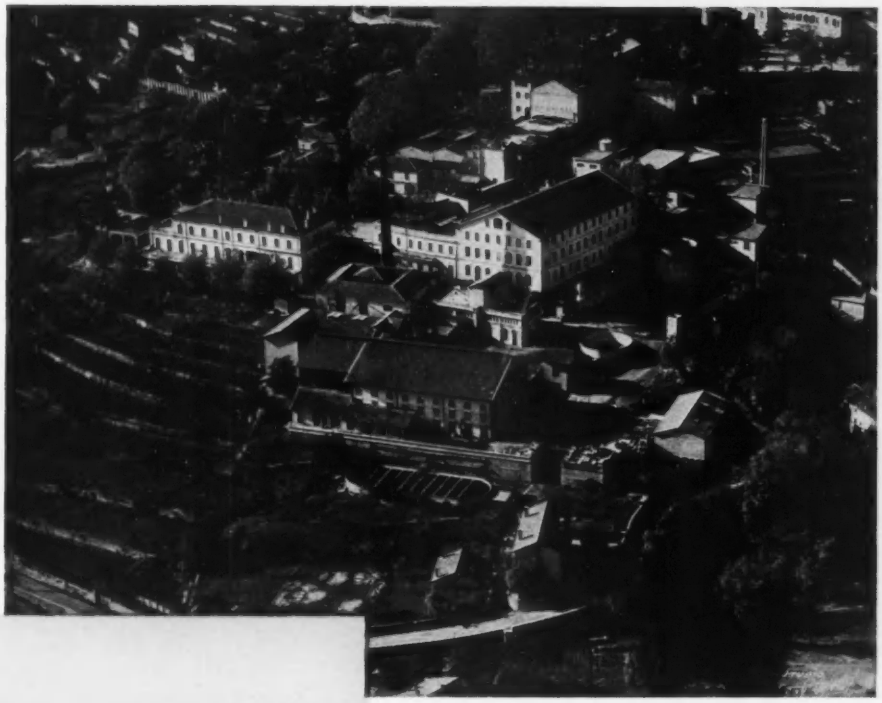

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DESIDERATA

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"Universal" Solvent

An Austrian supplier offers a new solvent, 2-dimethyl-4-oxymethyl-1, 3-dioxolane for essential oils, resins, flavors, plastics, waxes and related materials. It is water soluble, reputedly nontoxic and nonirritating. Compared to ether with an evaporation number of 1, this new solvent has an evaporation number of 600. All this makes it pretty useful. Since it doesn't dissolve metal and glass the material can be shipped, stored and used. Almost sounds too good.

Antibiotics in Deodorants

A December 30, 1955, A.M.A. Press Release on the use of antibiotics in deodorants follows: "Antibiotics have been used for lots of things and now physicians are using them as deodorants. This really isn't as strange as it seems.

"Researchers have found that it is not the perspiration which causes odor, but the action of bacteria on the perspiration. Antibiotics kill the bacteria.

"Two Philadelphia physicians studied 10 men who normally did not use deodorants or antiperspirants and found that repeated application of antibiotics completely stopped underarm perspiration odor for as long as 18 hours after the last application.

"Neomycin-based creams proved to be most effective in stopping the odor, they said in the current (Dec. 31) Journal of the American Medical Association.

"Antibiotics may be the solution for 'those few' persons who cannot tolerate the standard aluminum salt deodorants, which usually are 'highly effective,' they said.

"A cream containing neomycin sulfate was used once by 25 men. No further washing or application was permitted. Nineteen of the men were without any odor on the first day, seven the second, and four the fourth.

"In another part of the study, a cream containing the antibiotic, chloramphenicol, prevented odor in 18 of 25 men the first day, six the second day, and four the fourth.

"The study, which was supported by a contract from the Army, was made by Walter B. Shelly, M.D., Ph.D., and Milton M. Cahn, M.D., of the department of dermatology, University of Pennsylvania School of Medicine."

This department cannot conscientiously suggest the use of antibiotics in cosmetics because of their far-reaching consequences. Often there is sensitization, something the user cannot understand but an untoward reaction possibly resulting in lawsuits. Then again it may be producing resistant strains of microbials on the skin or even resulting in moniliasis. Until antibiotics are free from these objections, this department must take its present stand.

Preservative

There are indications that any quantity less than 1:750 of methyl parahydroxybenzoate as a preservative is useless. In fact nearer 1:500 looks like the answer to me. This is especially true in emulsions where there is a large water phase and a small oil phase. Some of the microbials sent to me by friends who encountered spoilage show this much resistance.

Sun Tan Oils

The addition of 5-10 per cent of a lanolin oil to a blend of mineral oils and one of the effective sunscreens makes for an emollient, even tanning product. One of the silicones in a 5-10 per cent concentration will further render the oil more waterproof.

Emulsion Viscosity

Have you ever had a thixotropic problem with a liquid emulsion, particularly when made with a nonionic? Sometimes the use of propylene glycol or glycerin thins the emulsion and keeps it more fluid. A few per cent, say 3 to 5 per cent seems to be most interesting.

Notes

If you want to use electronic sterilization, a new drug application will have to be filed, according to F.D.A. . . . Ever wonder how many trade named specialties are used in cosmetics? . . . Have you overlooked tallow alcohol sulfates? They are not so soluble as the lauryl derivatives but more kind to the skin. . . . The Wall Street boys look for a good 1956, but are cautious. . . .

a new answer
to an old problem

The problem of keeping pace with "styling" in cosmetics is especially acute with regard to fragrance. Here at *Synfleur*, our skilled perfumers and chemists have developed a number of valuable new lipstick aromatics which are unusually effective solutions to that problem. We shall be glad to incorporate recommended *Synfleur* fragrances in your lipstick mass and submit finished lipstick samples for your own determination of their appeal and value. There is no obligation.

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. . . Lactalbumin is being plugged in Europe as a base or active ingredient in cosmetics.

An interesting thesis entitled "The Rate of Settling of Solid Particles in W/O Emulsions," is part of a man's graduate work in a Canadian University. . . . The A.M.A. has extended the number of selenium sulfide antiseborrheic products list in N.N.R. to include 0.5% in jelly vehicle for use in eyebrows and eyelids. . . . British drug suppliers offer a B.P.C. cetrimide in ointment and shampoo form for simple dandruff and seborrhoeic dermatitis of scalp. . . . Speaking before the C.I.B.S., Steve Mayham gave another one of his "grass roots" speeches—and mostly no one finds fault nor can they disagree. . . . I am convinced man gets all his hell on earth when he moves his home or his plant and offices—We have just moved the plant, lab and offices—it has been no heaven, but it is at long last looking good. . . . There is an interesting barrel stacker made in Germany—stacks two drums at a time—You do need a forked truck to properly use it, however. . . . Heard Ernest Guenther describe just one little episode during his career of essential oil sleuthing at his Medal Award dinner—I'll stick to the lab, he is made of sterner stuff than I. . . . Incidentally, the Society of Cosmetic Chemists threw a fast pitch and gave me an honorary membership at the ceremonies commemorating the Tenth Anniversary—I am highly honored and of course tremendously pleased—Many, many thanks, fellow members.

Fluoride Dentifrices

Attorneys for the Toilet Goods Assn. and for one of the leading dentifrice manufacturers as well as technical experts on behalf of the industry attended the hearings in San Francisco and in Los Angeles, Calif. on dentifrices and mouthwashes containing soluble fluorides. According to the Toilet Goods Assn. it is believed that the Board of Pharmacy of California will amend its law so that both dentifrices and mouthwashes containing soluble fluorides will be approved for sale in that state when the dentifrices contain not more than 0.5% and the mouthwashes not more than 0.1% of fluorides. Poison sections of the pharmacy laws in certain states appear to interfere with the sale of such products. The California State Pharmacy Board called the hearings in order to amend the law.

SINE CERA

SINE CERA—Translated literally, means—*without wax*. When used to describe an object of art in the days of early civilization in Rome, it signified perfection. It was a guarantee that there were no flaws or cracks that had to be filled with wax. This term is the basis for the present English word "sincere".

REHEIS—This label, when seen today by the pharmaceutical and cosmetic chemist, also signifies perfection and integrity. Reheis fine chemicals—**SINE CERA**—are accepted throughout the world as standards of the highest quality. ® 1344

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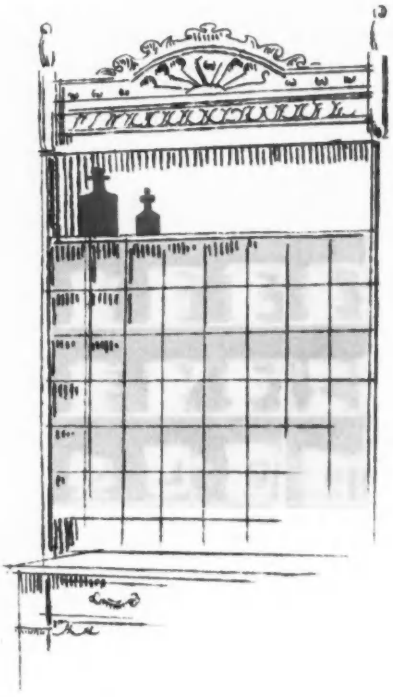

For the classics you want to compose, use more than common scents

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QUESTIONS & ANSWERS

1179: Cationic Substances

Q. *We have been using Tritons X-400 in a cream rinse. We understand that there are other compounds used for the same purpose and would be much obliged if you would supply us with their names and manufacturers We are also interested in opacifiers and thickeners for coconut oil shampoo and soapless oil shampoo. V.L., New York.*

A. Other cationic substances for making a hair rinse are supplied by the following companies: Miranol Chemical Co., Rayette Laboratories, Inc., and the Emulsol Corp. The same companies offer some opacifiers and thickeners for shampoo although the Ninol Laboratories claim to have a type of thickener specifically made for coconut oil shampoo, while the others including Stepan Chemical Co., have them for use in soapless shampoos.

1180: Wax in Hair Cream

Q. *We make a hair cream for men with lanolin, petrolatum and mineral oil base, but we are having trouble getting a gloss on the hair. We have tried paraffin wax but still do not get the hair as lustrous as desired. I will be very grateful if you can recommend some other chemicals which we can try to get the wanted effect. E.S.P., Wisconsin.*

A. Using the materials that you have, you should get plenty of sheen. However, you might try leaving out the petrolatum and increase the wax content. Use a very light mineral oil, one having a viscosity of 100 or less. You may have to use a microcrystalline wax in place of paraffin. Your wax supplier should be able to get you that material as well.

1181: Petrolatum in Brillantine

Q. *We are making a brilliantine with mineral oil and lanolin. We are thinking of incorporating petrolatum into our formula. Would this improve our hair oil? What kind of petrolatum and how much would be appropriate. How could I mix them? L.J.A., Mo.*

A. We are afraid that if you do dissolve petrolatum in your mineral oil brilliantine, it will tend to settle out on long or cool standing. Instead perhaps you should consider the use of heavy mineral oil. It is doubtful if petrolatum would make a good brilliantine addition in your case.

1182: Liquid Cream Neutralizer

Q. *Please send me a good formula for making liquid cream instant neutralizer. I.P., New York.*

A. We cannot help you formulate the product because we do not know the composition. We do know that such liquid cream neutralizers contain one of two bromates, namely, sodium or potassium in a concentration of from 5 to 10 per cent. This is added to an emulsion of low fat content which is stable on the addition of electrolyte.

IRIS V:

A study of this product by French perfumers convinces us that Synarome has developed a very outstanding product. The Orris note is extraordinarily powerful and exceptionally true to the natural product. It does not have the odor reminiscent of linseed oil present in most methyl ionones. IRIS V has great spreading power and such potency that its use is very economical. We strongly urge perfumers to make actual comparison tests in order to fully evaluate this product.

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FINE HEYDEN CHEMICALS

Progress IN Perfumery MATERIALS PART I

Paul Z. Bedoukian, Ph.D.

Author of Perfumery Synthetics and Isolates

Significant developments in 1955 in essential oils and aromatic chemicals . . . . Research on ambergris and musk compounds . . . . Irones and ionones . . . . Mint oils . . . . Rose oil . . . . Various flower oils . . . . Some important essential oils

As the year 1955 drew to a close, it was obvious that the high records of employment and earnings reflected boom times for our industry. There is every reason to believe that 1956 will also be a banner year and the perfume and cosmetics industry will continue to show a healthy growth.

All signs indicate that we are on the threshold of a new industrial revolution which will benefit everyone. Barring the folly of another war, the release of atomic energy for industrial purposes may well change our lives within a single generation. Evidence of the realization of better things to come is shown in the wild scramble to get ahead of competitors through research. There has never been such a shortage of chemists, engineers, physicists and mathematicians, and this shortage is likely to continue for many years to come.

Our industry, though a minor one when compared with the giants of oil, pharmaceuticals and other organic chemical industries, can also be expected to reap the benefits of the enormous amounts of research carried out in other fields. It is a pity that because of the smallness of our industry and the conditions prevailing, little cooperative effort is made in the direction of applied research and consequently major advances of value to us will probably come from sources outside our industry.

Two very important developments which could revolutionize the essential oil industry have kept everyone guessing for the past few years. One is the production of completely synthetic linalool and citral by taking advantage of recent advances in acetylene chemistry, and the other is the large scale production of synthetic myrcene which on hydration yields linalool and its isomers. The production of synthetic linalool and citral in tonnage quantities is expected to be realized in the near future, while hydration of myrcene is already in commercial production by several manufacturers. It is difficult as yet to foresee the impact of these developments on the future of the cultivation of essential oil bearing plants.

As in previous years, a considerable number of reports have appeared indicating the volume of research carried out in the development of new aromatics and the efforts being made to increase the production of essential oils. In view of the unsettled conditions in southeast Asia, it is not surprising that the production of essential oils in the Western Hemisphere is on the increase.

Odors and Perfumes

Our knowledge of the nature of odor and its perception is still in its infancy, a fact openly admitted by one of the leading chemists in the perfume industry. Certain observations, however, contribute greatly to the

understanding of the role of perfumes[1]. A new theory of olfaction has been advanced stating that odor perception is due to the penetration of odorant molecules into olfactory nerve cells[2]. It has been reported that odor is related to molecular vibrations. Exceptions have been pointed out stressing that because of incomplete data, it is not possible at present to correlate odor and vibrational spectrum[3]. When differences in odor of optical isomers are claimed, there is always the danger that the odor difference is due to traces of impurities present in one or both of the isomers. Such traces can often be detected by olfactory methods even though they can not be detected through chemical or physical analyses. It is now reported that contrary to earlier reports, there is no difference in the odor of di-methyl, d-, and l-trans-hexa-hydrophthalate[4]. The odor of racemic and optically active irones has been found to be similar although there is a difference in odor strength[48].

In an extensive article on odorous materials and their classification according to their duration of evaporation, Poucher[5] lists a very large number of perfumery compounds and points out their uses in practical perfumery. Another extensive article deals with the manner in which an air freshener works. The opinions expressed are based on considerable experimental data and anyone interested in this field will profit greatly from this study[6].

In the past years on numerous occasions we have referred to Morel's articles on the properties and applications of perfumery synthetics. This author, now using his real name (Maurer), has begun a new series of interesting and informative articles on the fragrance of naturally occurring bodies[7].

It has been indicated that the odor of a perfume is the result of the partial vapor pressure of its components[8]. An interesting article deals with the odor of jasmine and gives formulas illustrating the composition of synthetic jasmin oils[9]. A patent describes the preparation of dry perfumes by mixing the perfume oil in polyvinyl acetate. The product is claimed to be particularly suitable for the manufacture of bath powders[10]. In view of the growing interest in aerosol fragrances, a recent article on this subject is of real value[11].

Anyone planning to set up a perfume laboratory will obtain much useful information in a new article describing the essentials of such a laboratory[12].

It was formerly common practice to touch up perfumery chemicals in order to improve their apparent quality. This practice is seldom indulged in today as the desirability of having pure perfumery chemicals is now generally appreciated. The superiority of chemically pure aromatics and isolates in fine perfume work as against the commercial grades was stressed in a recent article[13]. The effect of perfumery chemicals on emulsified products has been discussed[14]. Another publication deals with the history and psychology of perfumes[15].

The May issue of the British *Soap, Perfumery & Cosmetics* is particularly interesting to the perfume chemist. It contains some historical articles of general interest and eulogizes the life of Albert Verley, scientist, industrialist, composer and author, whose services to our industry have not yet been fully appreciated[15a].

Analytical Methods

Chromatographic techniques are gradually being applied to the analysis of essential oils. An extensive review of their application to the analysis of essential oils and their constituents has appeared in an Italian publication[16]. Another review article discusses the applicability of these techniques to the separation of terpenes, sesquiterpenes and other terpenoid compounds[17]. A circular chromatography apparatus is described for the separation of terpenes in micro quantities[18]. It is reported that silica gel under normal conditions of chromatographic analysis causes isomerization of terpenes. Thus pinene has been converted to camphene, dipentent to terpinolene, carene to dipentent, etc.[19]. This is rather surprising as it is contrary to the findings of other workers.

Terpene hydrocarbons have been thought to be of little value for odors or flavors and their presence considered undesirable in essential oils. Hitherto there was no known method of determining the percentage of hydrocarbon terpenes in essential oils. An article which appeared lately describes a chromatographic procedure for the determination of terpenes and oxygenated constituents in essential oils. The experimental data presented indicate the general applicability of this method as an analytical procedure[20].

Infrared analysis is gradually coming into general use in the industry. Undoubtedly it is of much value as an analytical tool and its usefulness will increase as more and more data become available for pure perfumery materials. Two interesting articles deal with the usefulness of infrared methods of analysis, with special emphasis on the determination of citronellol in geraniol and vice versa[21, 22]. A general discussion on its value in the essential oil and aromatic chemical industry can be found in another publication[23]. Infrared spectral data of ionones and methyl ionones have appeared recently[23a]. The value of Raman spectra methods in the examination of essential oils has been stressed in another article[24].

Detailed methods of analyzing lemon oils have been given, including residue after steam distillation, ester content according to the method of Seeker and Kirby, and total aldehydes as citral according to the Kleber and Kirsten method[25]. In addition, spectrophotometric characteristics of Californian and Italian oils were also described. The technique of aldehyde determination by oximation is given in another article[26].

By using mecuric acetate, it is possible to determine the anethole content of an oil in the presence of methyl chavicol. The accuracy of determination is claimed to be within 0.5 percent[27]. After evaluating the various analytical methods for the determination of cineole in essential oils, it is claimed that the use of 50 percent solution of resorcinol in water gives almost quantitative separation of the addition product of cineole[28]. The method is said to be an improvement over previously reported procedures.

Research on Ambergris and Musk Compounds

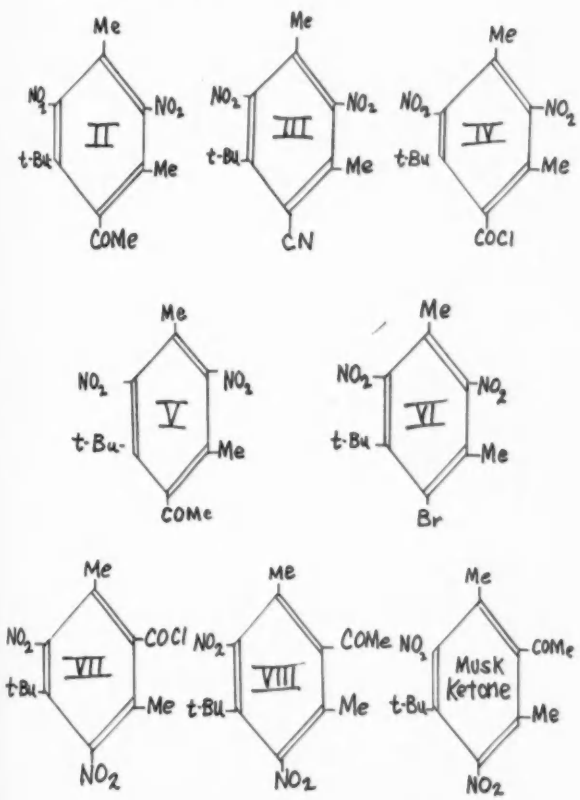
Research on the constituents of ambergris and compounds having ambergris like odors is continuing. In this connection, the study of the degradation products of sclareol are of interest[29]. Other studies on sclareol have been reported by Stoll and Hinder[30, 31, 32, 33, 34]. These researches have led to a patent describing the preparation of epoxide compounds having ambergris like odors[35].

The synthesis of ambreinolide and an isomeric lactone has been reported starting with dihydro-alpha-ionone[36]. Another publication reports the preparation of a compound from manool having an ambergris odor[37]. In continuation of their studies on ambergris, Lederer and co-workers have made further progress on the constitution of ambratriene[38].

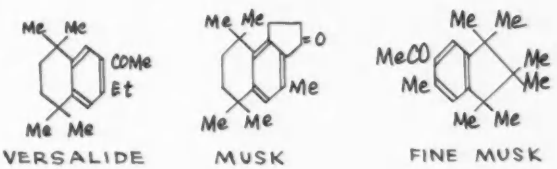
A series of Swiss patents describe the dehydration of hydroxy-cyclopolymethylenic ketones to the corresponding alpha beta unsaturated ketones by passing them over aluminum oxide at elevated temperatures and reduced pressures[39]. In connection with the synthesis of macrocyclic compounds, it is interesting to note reports on the synthesis of 1,14-tetradecanedioic acid and 2,15-hexadecanedione[40].

The extensive researches of Carpenter and Easter on the nitro musks merit special attention. Their original publications on the isomers, homologs and analogs of musk ambrette[41] and on tert-amyl homologs of the commercial musks[42], have now been followed by a third study on the asymmetrical musks of the dinitro-tert-butyl-meta-xylene series[43].

In this investigation, the asymmetrical isomer of musk ketone has been synthesized and found to possess an odor of somewhat lesser intensity. In addition, four new asymmetric musks in the dinitro-tert-butyl-meta-xylene series have been prepared. These include the nitrile (III) acid chloride (IV) carboxymethyl ether (V) and the bromo analog (VI) as shown in the formulas given below. All of these have musk odors of varying intensities. Two other symmetrical musks of the same series—the acid chloride (VII) and the carboxymethyl ether (VIII)—were also synthesized and found to possess weak musk odors. Numerous intermediate compounds of interest were of necessity prepared during the course of this investigation, and are of great value to those engaged in the study of nitro musks.



Further researches on compounds having musk odors have revealed the fact that it is not necessary to have nitration for the development of musk odors. Investigation of this group of compounds resulted in the synthesis of a number of compounds possessing musk odors. A total of 60 substituted tetrahydronaphthalenes have been synthesized and of these 18 have been found to have varying degrees of musk odor. Aside from these, it was found possible to have musk odor in substituted indanes. Continuation of these studies established that it is possible to have musk odor in compounds having three rings fused together. We thus have compounds having two six-membered rings having musk odor, a five-membered ring fused to a six-membered ring having musk odor, and two five-membered rings fused to a six-membered ring having musk odor. Some of these compounds are illustrated below, and one of them has already been placed on the market as Versalide[44].



Irones and Ionones

In continuation of his studies on irone, Naves has published further articles on the results of his experiments. It has been shown that pseudo-irone when cyclized with boron fluoride gives predominantly the cis-2,6-alpha irone, whereas the conventional phosphoric acid cyclization gives mostly the trans-2,6-alpha irone. The former is of course the most desirable of isomeric irones[45, 46, 47]. A synthesis of irone via thujaketone has been reported[48]. Optically active irone has been obtained by one hundred fifty crystallizations of the irone N-aminocarbamate of menthol. The regenerated optically active iso-alpha irone possessed the same odor as the racemic irone but of less intensity[49]. The synthesis of irones through a complicated series of reactions has also been reported by another author[50]. A somewhat similar set of reactions has been used to synthesize trimethyl irone[51]. A Swiss patent claims that by starting with the proper isomer of pseudo-irone, it is possible to get the desired isomer of irone using either boron fluoride or phosphoric acid as the cyclizing agent[51a]. The industrial aspects of the manufacture of irone were discussed in a lengthy and interesting article by Naves[52].

A critical study has been made of the cyclization products of pseudoionone with sulfuric acid[53]. Dehydro beta ionone is obtained by treating alpha ionone with mercuric acetate followed by dehydration, according to a Swiss patent[54].

Beta ionone has been shown to react normally with Grignard reagents yielding mainly the 1:2 addition product[55]. According to a Dutch patent, the reduction of beta-ionylidene acetonitrile with lithium aluminum hydride yields mainly the aldehyde[56]. The preparation of alpha and beta cyclocitrylidenacetic acids and their alcohols has been reported in another publication[57]. The preparation of isomer-free dihydro-gamma-ionone has been described[60]. The same authors gave the synthesis of 6-ethyl-alpha and 6-ethyl-beta ionone[61].

A method for the cyclization of geranyl acetone leading to the manufacture of dihydroionones appears in an American patent[62]. Condensation of camphenylanadehyde with acetone or methyl ethyl ketone is reported to give products possessing odors similar to ionone and methyl ionone[63].

Mint Oils

Very large quantities of both peppermint and spearmint are produced for use in food and drug products. In view of their importance, it is not surprising that every year there are a number of reports on their cultivation, analysis and uses.

Oregon State College has published a sixty-four page bulletin giving directions for the proper method of distillation of peppermint plants and describing the type of distillation equipment necessary to obtain the optimum yields of oil[64]. The yields of oil from the leaf, flower, stem, and from the whole plant were individually examined during a period of six weeks on Italo-Mitcham

peppermint grown in Italy[65]. A maximum yield of 40 kilograms of oil per hectar has been obtained. Japanese cornmint and American peppermint oil were subjected to a comparative examination[66]. Peppermint cultivation is also becoming increasingly important in Bulgaria. The oil obtained is now known as Bulgaro-Mitcham oil. Two reports describe the properties of this oil[67, 68]. Peppermint oil obtained from plants cultivated in Poland has been studied in detail[69]. It is interesting to note that peppermint oil obtained from Angola (Tropical Africa) had a high ester content (53.6%) and a low free menthol (13.5%), whereas the menthone content is only 4.8%[70]. The oil from the Belgian Congo had 46% menthol, 23.6% menthyl acetate, 18.8% menthone, and 3.5% menthofuran[71].

In analyzing for the menthol content of peppermint, the use of acetic anhydride in dry pyridine is recommended[72].

One of the troublesome substances found in peppermint oil is menthofuran, which is easily oxidized and leads to off flavors. It is most readily estimated by its infrared absorption band 13.6 u. It is noteworthy that the Japanese cornmint oil (Mentha arvensis) does not contain any menthofuran[73]. In reviewing the preparation and properties of menthofuran, it is stressed that this material is localized in the plant and the stolons contain about 32% of this oxide[74]. Another publication discusses the discovery of this material in mint oils and methods developed for its evaluation[75]. Menthofuran-2-carboxylic acid has been synthesized and reduced to the corresponding alcohol. The alcohol was quite unstable and rapidly formed a tar on exposure to air[76].

Carvone obtained from spearmint oil has been reduced to carveol in very high yields. Derivatives of both the d-cis and d-trans alcohol were prepared[77]. A report has been made of the chemical examination of Indian spearmint oil[78].

Rose Oil

Judging from the number of reports appearing from Bulgarian sources, the cultivation and distillation of roses are being vigorously pursued in that country. Needless to say, Bulgarian rose oil still maintains its indispensable role in the creation of the finest perfumes.

The conditions necessary for the production of the finest quality of rose oil have been listed. For example, it is claimed that roses must be picked in the morning and distilled as soon afterward as possible. On storing the flowers for twenty-four hours, a loss of thirty per cent occurred in the yield of oil[79]. Semi-micro methods for the estimation of the oil yield of the flowers[80] and the determination of the completion of the extraction of the oil by distillation have been reported[81, 81a]. The method involves the measurement of the surface tension of the distillate water[82]. It has been found possible to reduce the loss of oil from the flowers by keeping them in 20% salt solution[83]. It is well known that a large proportion of the oil of rose is dissolved in the distillate water. This water is then extracted with various solvents to recover the oils. More recent methods use absorption of the essential oil on activated carbon, followed by solvent recovery[84]. Two publications give additional data on the analysis of Bulgarian rose oils[85, 86]. Methods of production and properties of the oils obtained were also discussed in another report[87].

In the Soviet Union, experiments are being conducted to study methods of not only preserving the oil in the petals but of artificially increasing the oil content. Thus it has been found that on crumpling the petals of red roses there was an increase in the essential oil content and a decrease in the carbohydrates. It is claimed that under controlled conditions crumpled petals of red roses will yield two and a half times the normal quantity of oil[88]. Examination of the oil of roses cultivated in the Soviet Union has been reported[89].

(To be concluded next month)

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A COMPARISON OF...

TWO Commercial Methods for the Production of Citrus Oils in Florida

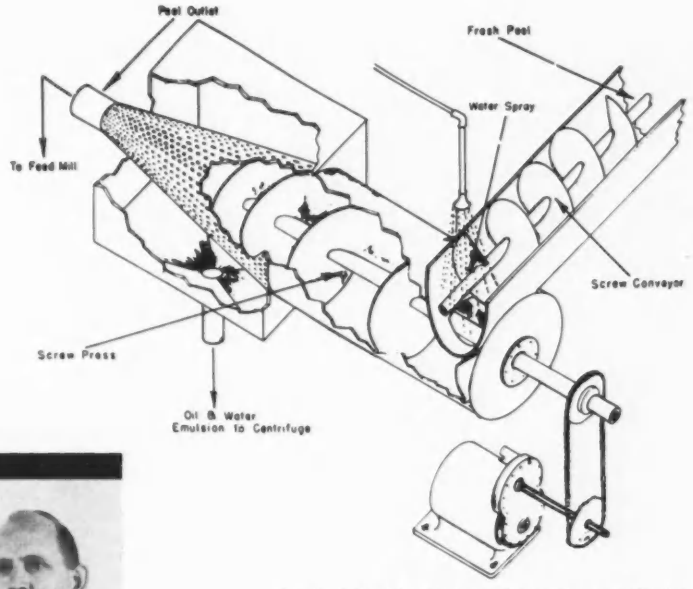


Fig. 2. Schematic diagram of screw press extractor.

James W. Kesterson, M. S. Chem Eng.

R. Hendrickson, B. S.*

Data on the physiochemical properties of cold pressed orange, grapefruit, tangerine and Persian lime oils as manifested by the two methods

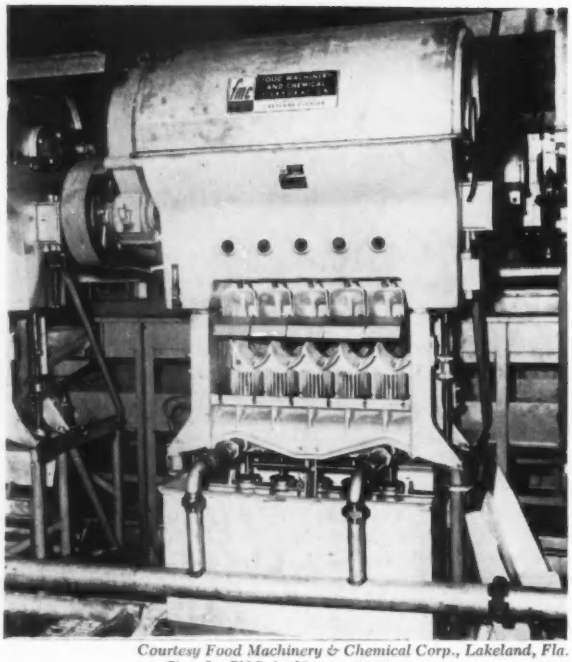
DURING the past three or four years, there have been significant changes in the methods of manufacture of citrus oils in Florida. The production of oil by the Pipkin roll extractor, Pipkin juice extractor and Fraser-Brace extractor has been discontinued and a new extractor, called the FMC In-Line extractor has been substituted in their places. At the present time citrus oils are produced primarily by two methods—the screw press and FMC In-Line extractor. It has been estimated that the FMC In-Line extractor is used to juice about 75 percent of all the fruit processed in Florida. This means that in the future a larger proportion of oil will possibly be produced by this method. The object of this paper is to describe the two commercial methods of production used in Florida during the 1954-55 season, and to present data on the physicochemical properties of coldpressed orange, grapefruit, tangerine and Persian lime oils as manufactured by the two methods.

METHODS OF COMMERCIAL MANUFACTURE

The FMC In-Line Extractor

The FMC In-Line extractor[1] was so named because the series of extraction cups are situated in a straight line. This unit is used for oranges, tangerines, lemons,

*Citrus Experiment Station, Lake Alfred, Florida
Florida Agricultural Experiment Station Journal Series, No. 448



Courtesy Food Machinery & Chemical Corp., Lakeland, Fla.
Fig. 1. FMC In-Line extractor.

limes and grapefruit. The upper cups are mounted on a common cross-bar which by means of a cam-drive is moved in a fixed up and down path. The corresponding lower cups are held in rigid position. The sides of these cups consist of numerous fingers that intermesh when the upper and lower cups are brought together. A circular cutter tube is fastened in the bottom of each of the lower cup members, and this protrudes below into a strainer tube. Mounted below the lower cups and enclosing the strainer tubes is a manifold which is common to all of the lower cups and strainer tubes of a single machine. An unperforated hollow tube (or orifice tube) closely fitted inside the strainer tube is caused to slide up and down inside the cutter. The orifice tubes are fastened to a cross-bar which is moved in a fixed up and down path by the same cam-drive which moves the upper cups.

The fruit is delivered by a conveyor belt to the rear side of the machine where there is a joined series of runways, one for each cup. A cam-driven lift functions as a positive means of placing fruit individually into the lower cups. The motion of lift is synchronized with the movement of the upper cups and also the orifice tubes mounted on the lower bar.

When the fruit is placed in the lower cup, the upper cup is moved down in a smooth stroke, pressing the fruit against the cutter tube. This cuts a plug in the fruit. The inside of the intermeshing cups is so contoured as to give virtually complete support to the outer surface of the fruit. As the upper cup continues its downward stroke, the entire inner portion of the fruit is forced down into the strainer tube within the manifold. At the same time the orifice tube moves upward inside of the strainer tube, thus causing the juice to be forced through the perforated strainer tube into the manifold. The stroke is completed when the upper cup completely meets the cutter tube, thus sealing off this tube and cutting a plug in the upper portion of the fruit. At this point of the stroke, the inner portion of the orange which has been forced into the strainer tube is completely pressed of juice. At the same time, the peel of the fruit is shredded and dropped into a screw conveyor trough which carries it to the by-product operation.

More recently, a new type of cup assembly has been devised which makes it possible to recover the peel oil expressed during the juice extraction operation as described above. This is designated as "oil cup assembly." In such a unit, the upper and lower cups are reversed. Cup-shaped baffles surround the fingers of the upper cup and, as the oil is released by the shredding action, it is collected on the baffles and directed to one side of the extractor. Considerable volatilization of the oil accompanies this operation, as evidenced by the aroma of the surrounding atmosphere. The oil and aqueous matter expressed from the outer peel, along with small particles of outer peel, are mixed with a small amount of water to provide fluidity. This mixture is run through a finisher equipped with a fine screen to give an oil emulsion from which peel oil is separated by means of a centrifuge. Fig. 1 shows a FMC In-Line extractor with oil cups installed.

Screw Press Method of Extraction

In this method, schematically illustrated in Fig. 2, tapered screws press the crushed peel against a perforated screen, thereby squeezing out the oil. This operation can be carried out with the screws in either a

Type of Extractor	Screw Press							FMC In-Line Extractor						
Month	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Quantity of Oil – lbs.	28,000	28,000	28,000	20,000	28,000	28,000	28,000	28,000	30,000	30,000	30,000	30,000	30,000	30,000
*Variety of Fruit	100% H	50% H 50% P	100% P	75% P 25% V	100% V	100% V	100% V	100% H	50% H 50% P	100% P	75% P 25% V	100% V	100% V	100% V
Yield – lbs. Oil/Ton Peel	5.30	4.75	4.01	7.08	9.46	3.71	6.85	—	2.16	3.22	3.50	5.28	5.16	5.00
Specific Gravity 25°C/25°C	0.8424	0.8422	0.8421	0.8421	0.8421	0.8425	0.8424	0.8436	0.8429	0.8435	0.8429	0.8433	0.8432	0.8437
Refractive Index N^{20}_D	1.4726	1.4727	1.4727	1.4727	1.4727	1.4727	1.4731	1.4731	1.4730	1.4732	1.4730	1.4730	1.4732	1.4731
Ref. Ind. of 10% Dist. N^{20}_D	1.4718	1.4719	1.4719	1.4719	1.4719	1.4717	1.4718	1.4720	1.4719	1.4718	1.4719	1.4718	1.4719	1.4721
Difference	0.0008	0.0008	0.0008	0.0008	0.0008	0.0010	0.0009	0.0011	0.0011	0.0014	0.0011	0.0012	0.0013	0.0010
Optical Rotation α^{25}_D	+97.55	+97.16	+97.28	+97.03	+97.06	+97.47	+97.34	+96.73	+96.83	+96.60	+96.96	+96.86	+96.71	+96.52
Opt. Rot. of 10% Dist. α^{25}_D	+98.32	+97.30	+97.78	+97.34	+97.18	+97.93	+97.62	+97.08	+97.81	+97.58	+97.18	+97.81	+98.20	+97.71
Difference	+ 0.77	+ 0.14	+ 0.50	+ 0.31	+ 0.12	+ 0.46	+ 0.28	+ 0.35	+ 0.98	+ 0.98	+ 0.22	+ 0.95	+ 1.49	+ 1.19
Aldehyde Content – %	1.39	1.46	1.53	1.63	1.68	1.80	1.67	1.42	1.50	1.42	1.77	1.77	1.63	1.48
Evaporation Residue – %	1.30	1.50	1.53	1.65	1.73	1.90	2.16	2.23	2.28	2.67	2.35	2.41	2.53	2.68

* H = Hamlin, P = Pineapple, V = Valencia

Table I. The relationship between the physical and chemical properties of coldpressed orange oil produced in Florida by two different methods during the 1954-55 season.

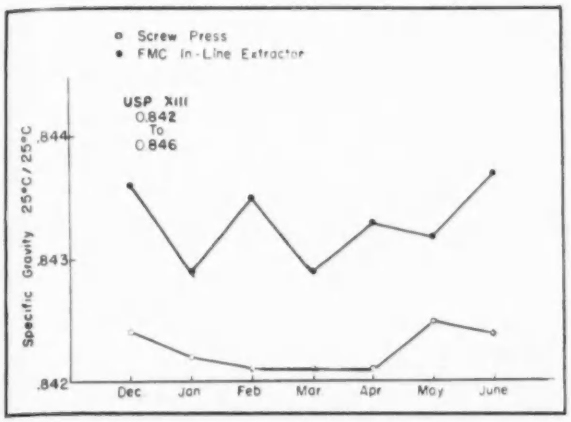


Fig. 3. Specific gravity of coldpressed orange oils extracted by two different methods during the 1954-55 season.

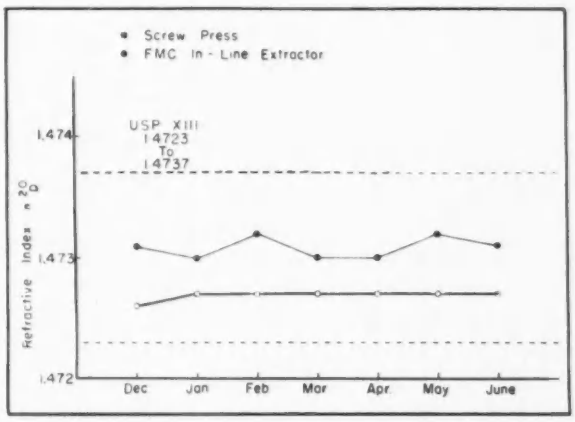


Fig. 4. Refractive index of coldpressed orange oils extracted by two different methods during the 1954-55 season.

vertical or horizontal position. It has been found that the yield of oil is proportional to the amount of surface area available for pressing out the oil. For this reason, five 2-ton presses will give a greater yield of oil than one 10-ton press. Water may or may not be used in the pressing operation.

General Processing Procedure

Each of the above methods of extraction give an emulsion of oil and water. The oil is separated centrifugally from the aqueous phase by passing the emulsion through a sludger (8-10,000 r.p.m.) and then through a polisher (16-18,000 r.p.m.).

Following separation, the oil is stored for approximately one week at 32°-40°F. During this winterizing treatment, undesirable waxy materials separate from the oil and are allowed to settle. The clear oil is filtered or decanted into stainless steel storage tanks or tin-dipped containers, which are then maintained at a storage temperature of about 40°F. Air is usually excluded from the container to prevent deterioration. Exclusion of air is accomplished either by filling the container full with oil or by displacing the air with carbon dioxide.

EXPERIMENTAL PROCEDURE

Survey of Commercial Plants

In order to secure the data used in the preparation of this paper, the authors visited plants employing the two methods of oil extraction. Oil samples were collected and yield data obtained on each individual process covering periods of operation of approximately one month.

Forty samples of various types of coldpressed oils were secured from commercial processing plants during the course of this study. Orange oil samples were collected from each process once a month from lots of oil ranging from 20,000 to 30,000 pounds.

Methods of Analyses

The values for refractive index, optical rotation, specific gravity and aldehyde content of the oils were determined by the accepted methods for this purpose. The evaporation residue was determined by a method very similar to that of Guenther[2]. A watch glass (100 mm. in diameter) was used in place of an evaporating dish. After having been heated on the steam bath for the prescribed length of time, the watch glass was transferred to an oven at 80°C. and dried for one hour.

EXPERIMENTAL RESULTS

The relationship between the physical and chemical properties of samples of coldpressed orange oil, secured from two commercial plants during the 1954-55 season are shown in Table I. Figures 3, 4, 5 and 6 present these results in graphic form.

Data pertaining to the yield of oil obtained by the two types of extractors during the period in which the sample was collected are included in Table I. In most cases, samples were taken from 28,000 pound lots of oil which had been accumulated over a period of two to four weeks.

In the course of this study, coldpressed grapefruit,

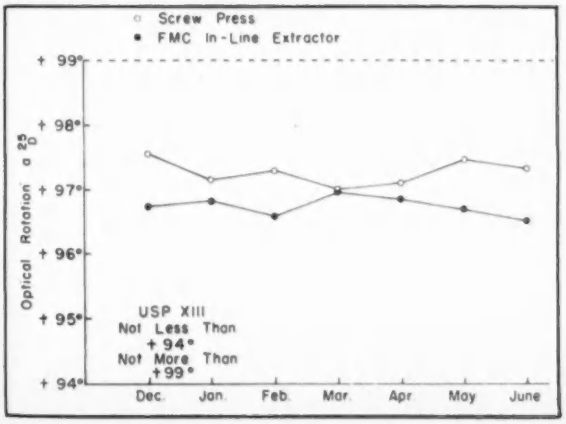


Fig. 5. Optical rotation of coldpressed orange oils extracted by two different methods during the 1954-55 season.

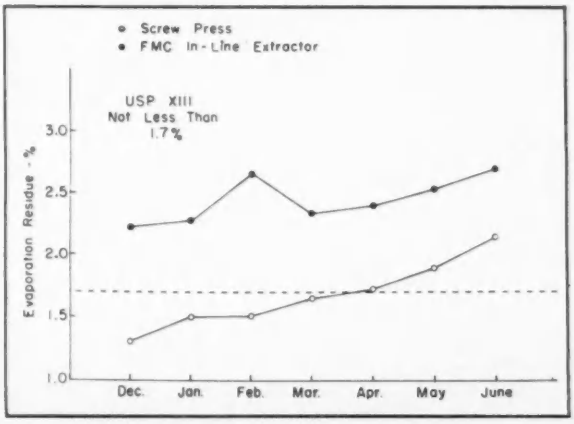


Fig. 6. Evaporation residue of coldpressed orange oils extracted by two different methods during the 1954-55 season.

Method of Extraction	Grapefruit		Tangerine		Persian Lime	
	Screw Press	FMC In-Line Extractor	Screw Press	FMC In-Line Extractor	Screw Press	FMC In-Line Extractor
Quantity of oil - lbs.	28,000	2,000	500	1,000	500	1,500
Specific gravity 25°C/25°C	0.8502	0.8524	0.8447	0.8460	0.8808 (20°C)	0.8735 (20°C)
Refractive index N_D^{20}	1.4755	1.4764	1.4739	1.4736	1.4847	1.4817
Ref. ind. of 10% dist. N_D^{20}	1.4714	1.4717	1.4721	1.4721	1.4730	1.4731
Difference	0.0041	0.0047	0.0018	0.0015	0.0117	0.0086
Optical Rotation a_D^{25}	+93.51	+92.70	+93.31	+92.45	+41.18 (20°C)	+43.96 (20°C)
Opt. rot. of 10% dist. a_D^{25}	+96.94	+97.61	+94.42	+94.00	+50.27 (20°C)	+48.99 (20°C)
Difference	+ 3.43	+ 4.91	+ 1.11	+ 1.55	+ 9.09	+ 5.03
Aldehydes - %	1.48	1.48	0.96	1.12	4.64	5.19
Evaporation residue - %	5.80	7.41	2.75	3.63	13.40	9.30

Table II. A comparison of grapefruit, tangerine and Persian lime oils extracted by two different methods during the 1954-55 season.

tangerine and Persian lime oils made by both the screw press and FMC In-Line extractor were examined. The analyses for typical samples of these oils are included in Table II for purposes of comparison.

DISCUSSION OF RESULTS

Method of Extraction and Yield of Oil in Relation to Properties

In consideration of Table I and Figures 3, 4, 5 and 6, it can be seen that the FMC In-Line extractor oil has higher values for specific gravity, refractive index and evaporation residue; and lower values for optical rotation than the screw press oil. When the physical and chemical properties of the oils are the only consideration, the FMC In-Line extractor oil would appear to be of better quality. However, it has been the opinion of several essential oil firms that the screw press oil is better from a flavor and aroma standpoint. This is probably best explained by a comparison of the two methods of oil extraction. As shown in Table I, the yield of oil obtained from the screw press was about twice that obtained from the FMC In-Line extractor. On the basis of previous work[3], it would then follow that the screw press oil should have had higher values for specific gravity, refractive index and evaporation residue; and lower values for optical rotation. Actually the reverse was true. This difference is brought about mainly by the difference in the method of oil extraction. When pressure is applied to the fruit, in the FMC In-Line extractor, the oil cells are ruptured and the oil is released to the atmosphere. Thus, the oil is partially volatilized; this, in effect, acts as a partial distillation. This accounts for the loss of the more volatile flavor components, as well as giving increased values for the physical and chemical properties. This partial distillation thus makes the oil appear to have the physical and chemical qualities of a high yield oil; but at the sacrifice of top note flavor qualities.

Coldpressed Grapefruit, Tangerine and Persian Lime Oil Extracted by Two Different Methods

The physical and chemical properties of commercial samples of coldpressed grapefruit, tangerine and Persian lime oil, which were produced by the screw press and FMC In-Line extractor, are presented in Table II. These lots of oils range from 500 to 28,000 pounds. It would appear from these data that the same relationship which held true for orange oil may hold true for grapefruit and tangerine oil. However, too few samples have been evaluated to draw any definite conclusions in this regard. Therefore, this data has been presented to indicate the type of oil which may be expected from grapefruit, tangerine and Persian lime by the FMC In-Line extractor.

SUMMARY

Two commercial methods of production of coldpressed orange oil in Florida during the 1954-55 season have been studied and compared. The quality of orange oils as indicated by their physicochemical properties, flavor and aroma is inuflenced by the method of extraction and yield of oil obtained from the peel.

The characteristics of coldpressed grapefruit, tangerine and Persian lime oil extracted by two different processes are presented.

Literature Cited

1. Gerwe, R. D., Extracting Citrus Juices. Proc. Fla. State Hort. Soc. 67: 173-176. 1954.
2. Guenther, E. The Essential Oils. Vol. *1*: 427. 1948. D. Van Nostrand Co., Inc.
3. Kesterson, J. W. and R. Hendrickson. Essential Oils from Florida Citrus. Univ. of Fla. Agr. Exp. Sta. Tech. Bul. *521*: 1-70. 1953.

"I used an enchanted perfume last year—what have you that's exotic?"

Aerosol Spray Patterns

The first photographs to show aerosol spray patterns have been made by G. Barr & Co., according to Morris J. Root, technical director.

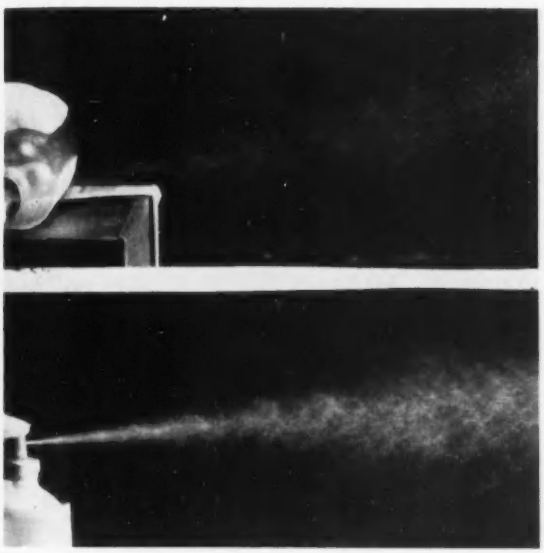
The photographs show two techniques, developed by the company, which substantially facilitate the adaptation of all cosmetic, pharmaceutical, and household products for aerosol packaging. One technique involves photographing the spray at such a speed as to stop the action. The other technique involves special use of dyes.

Mr. Root states that these new methods make possible close observation of the spray pattern and enable measurement of such vital characteristics of the spray pattern as spray angle, particle size distribution, wetness, and area of coverage.

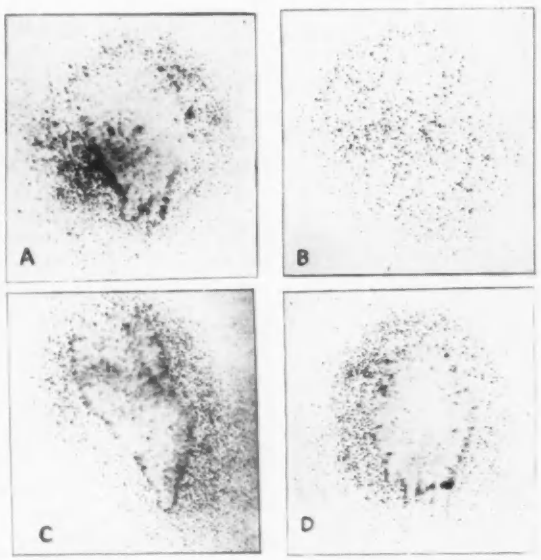
He explained that in the photographic technique, high speed photography "stops" the spray at 1/10,000th of a second. In the dye method, the surface spray pattern is recorded on dye-and-talc brushed paper.

With the resulting complete visual record of the spray pattern—both in air and on the surface—the aerosol technician has the means for controlling spray characteristics in the products he formulates, using comparative pictures of spray patterns. For example, in "tailoring" the appropriate area of coverage for a given product, he compares coverage produced by different types of dispensing valve buttons, and then selects the button most appropriate for the product.

The two new measuring tools also aid the aerosol formulator in selecting the type of gas used as the propellent, the proportion of the gas, and the type of valve construction. They will speed further developments in the rapidly growing field.



By means of high speed photography (1/10,000th of a second) the technician can "stop" the spray for observation of its general characteristics and measurement of the spray angle. Spray particles are actually shown in the air. The upper photo shows a lighter spray than the lower.



A dye technique permits observation of the spray pattern on the sprayed surface. Variations in spray characteristics, such as wetness, particle size distribution, and area of coverage are shown. For example, A, C, and D are relatively wet sprays, and B is dry and finer.

AEROSOL NOTES

The Aerosol is the subject of a 24 page booklet issued by the research department of Polak & Schwarz, Zaandam, Holland. In it the history of aerosols is given, the principles and composition of the aerosol container are explained and general problems are discussed tersely but adequately. The booklet closes with a review of the most important aerosol products. Under problems, compatibility of the components, pressure, nature of the spray or foam formation, inflammability, stability and the important subject of perfuming are covered.

* * *

A definite reduction in consumer dissatisfaction with the mechanical operation of aerosols was indicated in a market research survey by the Kinetic Chemicals Division of E. I. duPont de Nemours & Co. One exception was personal deodorants and insecticides. In spite of these the survey showed that aerosol packed products in nine categories studied have increased in consumer preference.

* * *

Aerosol sprays are recommended for food packaging. One expert states that peanut butter, catsup and French dressing are among the edibles that will be packed in aerosol containers before long.

* * *

Anti-perspirants and deodorants in aerosols will be the most important development in the pressurized package field this year according to Douglas Atlas of G. Barr & Co.

* * *

Peterson Filling & Packaging Co. has been organized in Danville, Ill. to engage in contract and custom filling of all types of containers with emphasis on aerosol filling.

Executives of the Essential Oil Assn. of the U. S. A. for 1956: Robert E. Horsey, executive committee; Frank Dittrich, secretary-treasurer; Pierre Coutin, president; Gert Keller, vice president; Robert A. Engel, Michael Lemmermeyer and Frederick J. Lueders, executive committee.

The Essential Oil Association of the U. S. A.

For 28 years the Essential Oil Assn. of the U.S.A. has been working to advance the interest of the industry with marked success. It integrates numerous activities of a common nature, it guards against harmful legislation here and abroad, it promotes standards of quality and otherwise serves to develop the industry along sound lines. Member companies now serve many industries besides the cosmetic, soap and flavor industries. Permanent offices are maintained in New York under the able guidance of Ray C. Schlotterer, managing director. Some snapshots taken at the annual meeting of the association are shown on these pages.

SPEAKERS

Frank Dittrich gave two reports: one on the state of the treasury and the other for the Import committee.

Gert Keller's careful analysis of pending chemical additives in food legislation was lucid and informative.

Pierre Coutin, newly elected president, presided in place of President Louis Gampert who was ill.

Adolph Dingelder received a vote of thanks for the notable work of the Export committee.

Robert E. Horsey and Eric Vles admire the professional talent at the annual banquet.

George McGlynn, Dr. Victor Fourman, Charles P. Walker, Albert Dillinger and Alphonse Pillet enjoy a chat together.

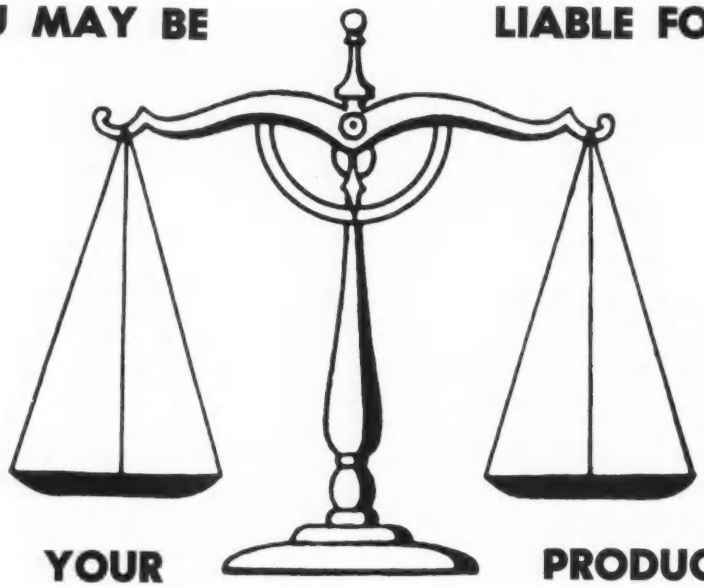
J. P. Dominica, G. J. Waegelin, F. J. Lueders, Ross Daggett, J. W. Voit and L. M. Malstadt snapped just before the banquet.

This is a portrait of Waldo Reis reporting on membership—not delivering a sermon.

Philip Chaleyer, a veteran in the industry, pauses to welcome a friend.

R. L. Daggett, who added much to the entertainment; George Branigan, Arch Payne, Chris Berlingholt, Philip Chaleyer and Frank Dittrich at the cocktail party.

YOU MAY BE LIABLE FOR YOUR PRODUCTS



When and why the law makes a manufacturer pay damages to the ultimate consumer for a defect in or a foreign substance in a product, a faulty container, etc. . . . . Principles of product liability . . . . Possible protection

Michael J. Thuma, L.L.B.*

A PRODUCT, article, commodity or device causing personal injury or property damage to a consumer or user because of a defect or foreign substance therein, discoverable on reasonable inspection or analysis, renders the manufacturer of it liable in damages.

The general rule throughout the United States, is that an ultimate consumer may bring an action directly against a manufacturer or packer, either upon the theory of negligence or breach of implied warranty, for injuries sustained from the use of a product, although there may be no contractual relationship between the parties. (1)

This rule of liability had its beginning in a New York case entitled *Thomas v. Winchester* (2) decided in 1852. In this case the defendant was engaged in the manufacture and sale of certain vegetable extracts for medicinal purposes. Among the extracts prepared and sold were those respectively known as "extract of dandelion" and "extract of belladonna." A jar of the poisonous "extract of belladonna" was mislabeled "extract of dandelion," and sold as such to a jobber who in turn sold it to a druggist. The evidence showed that a quantity of belladonna administered in the same portions as dandelion might be, would destroy or seriously impair the health of the person to whom administered. The evidence also showed that the two extracts resemble each other in color, consistence, smell and taste, but on careful examination by one acquainted with such articles one might be distinguished from the other. Plaintiff's physician prescribed a medication for her containing "extract of dandelion" and her husband had the prescription filled at the drug-store. The druggist used the jar of belladonna which he thought was "extract of dandelion" and which was so labeled. The medication was administered to the plaintiff and she became very ill. She recovered and a suit for damages followed. The Court said:

> "The defendants' duty arose out of the nature of his business and the danger to others incident to its mismanagement."

The Court brushed aside the argument that the defendant had no dealings with plaintiff and that they were strangers to each other.

Basic Principles

Later, in 1916, Justice Cardozo of the New York Court of Appeals, extended the principle of *Thomas v. Winchester* to mechanical devices—automobiles. In the case of *MacPherson v. Buick Motors Co.* (3) Justice Cardozo, referring to the *Thomas Case* as the "foundation of this (products liability) branch of the law," and as "a landmark of the law," said—

> ". . . the principle of *Thomas v. Winchester* is not limited to poisons, explosives, and things of like nature, to things which in their normal operation are implements of destruction. If the nature of a thing is such that it is reasonably certain to place life and limb in peril when negligently made, it is then a thing of danger. Its nature gives warning of the consequences to be expected. If to the element of danger there is added knowledge that the thing will be used by persons other than the purchaser, and used without new tests, then irrespective of contract, the

*Chicago, Ill. Specialist in Product Liability Law. Abstract from F. E. M. A. paper.

manufacturer of this thing of danger is under a duty to make it carefully.

"There must be knowledge of danger, not merely possible, but probable. It is possible to use almost anything in a way that will make it dangerous if defective. This is not enough to charge the manufacturer with a duty independent of his contract.

"There must also be knowledge that in the usual course of events the danger will be shared by others than the buyer. Such knowledge may be inferred from the nature of the transaction. But it is possible that even knowledge of the danger and of the use will not always be enough. The proximity or remoteness of the relation is a factor to be considered."

Manufacturer Held Liable

Resting their reasoning on the principles laid down in the *Thomas* and *MacPherson* cases, and decisions stemming from these cases, courts have held the manufacturer liable:

—for second degree burns sustained by plaintiff when she applied a perfume to her face; (4)

—for a dermatitis condition a person developed from a hair dye because of a poisonous substance it contained; (5)

—for injury to an eye from a dye for darkening eyebrows and lashes; (6)

—for burns sustained by a woman when glazed netting on dress she was wearing ignited, it appearing it was stiffened by some form of nitro-cellulose, a highly explosive substance; (7)

—for death of child due to a poison known as sodium fluoride, administered to the child from a sealed package labeled bicarbonate of soda; (8)

—for illness due to maggots found in a prepared, sealed cheese sandwich; (9)

—for illness due to a portion of a mouse in packaged ice cream; (10)

—for illness due to drinking from a bottle of beer containing a prophylactic latex; (11)

—for injuries due to glass in canned milk; (12)

—for injury to consumer sustained when he bit into a small stone or pebble in can of peas; (13)

—for injury from pin in foil-wrapped candy bar; (14)

—for illness due to a worm in a candy bar; (15)

—for illness due to a spider in a bottle of beverage; (16)

—for illness due to decomposed bugs in a bottle of beverage; (17)

—for illness due to cockroach in bottle of beverage; (18)

—for damage to trees due to untested chemical in insecticide; (19)

Liability for Mechanical Defects

Numerous decisions have been rendered holding a manufacturer liable respecting various mechanical devices and appliances, for instance:—

—electric vaporizer ignited severely burning infant child; (20)

—misfit plug on barrel of liquid caustic soda, so that it "shot-out" when plaintiff commenced to loosen it, and plaintiff lost the sight of one eye; (21)

—chair collapsed due to crack in leg and patron of beauty parlor thrown to floor; (22)

There are a great number of cases concerning a container or package of merchandise. The producer of the merchandise was held liable where a bottle of soda exploded causing waitress to lose the sight of an eye (23) and bottle of Coca-Cola exploded cutting waitress' hand (24).

Limitations on Manufacturer's Liability

The happening of an accident does not establish negligence on the part of the manufacturer or producer. The claimant has the burden of proving by a preponderance of the evidence that the product in question was defective or harmful, and that it was so due to some negligent act or omission of the manufacturer and that as a proximate result of the defect or harmful ingredient claimant was injured and damaged. The evidence must show that the condition complained of was caused by the manufacturer and that there was no tampering or alteration by others. Accordingly recovery was denied:

—where a liver extract was claimed to contain an irritant harmful to claimant, the evidence being inconclusive as to what, if any, steps were taken by the doctor in sterilizing the hypodermic needle used and preparing the skin at place of insertion; (25)

—where a permanent hair waving device known as "Vapet" was not shown to be defective or negligently made and the injury from other sources was not reasonably excluded; (26)

—where a sun tan lotion was claimed to have caused a kidney disability due to aniline dye poisoning when the evidence indicated the preparation did not contain an aniline dye; (27)

—where dermatitis condition was claimed due to contact with ethylized gasoline, there being no showing that it was inherently dangerous to human beings on external contact; (28)

While plaintiff must prove his case by a preponderance or greater weight of the evidence, still he is not required to rule out every other possibility before the manufacturer is required to answer. In the case where a portion of a mouse was found in a prepared block or "top" of ice cream the Court held that the mere fact there was a "possibility" that the mouse was not in the "top" when it was delivered to the dealer was not sufficient to take the case from the jury, it only being required that "reasonably possible causes must be excluded" and claimant is not compelled "to exclude everything which the ingenuity of counsel may suggest as possibly causing or contributing to an incident."

Degree of Care Required

In regard to the degree of care required of the manufacturer or packer of foods, or the bottler of beverages, in the preparation of the product for sale to the public, and ultimately to the final consumer, the test apparently approved by all, is that there should be the exercise of that degree of care that is commensurate with the known or foreseeable dangers. The cases state or imply that the requirement is that of ordinary or reasonable care. (29)

The weight of authority is that the duty of a manufacturer is to use due and reasonable care in manufacture, as to be commensurate with the harm likely to result from a defect. This may require the making of a test of the article, a part thereof, or the material used, which would be calculated to ascertain its safety or sufficiency for the purpose of its intended use. Such tests should be made at appropriate times, previous to releasing the article to the public, if it becomes apparent that it is reasonably necessary to do so in order to prevent injury or damage. (30)

Test of Deleterious Ingredient Alone Insufficient

Test alone will not excuse a manufacturer for a defective condition or deleterious ingredient or foreign substance. The Courts hold that customary tests cannot be

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The Amerchols are safe, non-ionic, natural **EMULSIFIERS, PENETRANTS** and **EMOLLIENTS.** They will help you achieve superior cosmetic and pharmaceutical formulations by markedly improving stability, texture, appearance and effectiveness.

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justified with respect to things obviously dangerous to life or limb if such tests do not disclose defects. (31) A manufacturer or producer must keep abreast of scientific improvements so that he is employing the latest methods known to science because that is the kind of evidence he will be confronted with in a court-room. It behooves us to take note of the words of Justice Cardozo in the *MacPherson* case back in 1916 when he said, speaking for the Court, "The principle that the danger must be imminent does not change, but the things subject to the principles, do change. They are whatever the needs of life in a developing civilization require them to be." We cannot employ "stagecoach" methods in jet propulsion equipment.

The presence of a deleterious substance in a bottle of beverage or prepared food is sufficient to make a prima facie case of negligence, and shifts to the manufacturer the burden of proving absence of negligence. Proof of the manufacturer's plan and system although calculated to exercise every precaution is not sufficient, alone, to meet and overcome such prima facie case. If the plan or system is contradictory or of such a nature as to leave room for a difference of opinion as to whether the manufacturer exercised reasonable care, then this is a question for the jury to decide. (32)

Where a person holds himself out as the manufacturer of a product he will be held to the liability of a manufacturer. In the case of *Thomas v. Winchester* the defendant did not actually make the commodity. He purchased it packaged from another and put his labels on it. He then attempted to excuse himself by claiming another manufactured it. The Court held: "The word 'prepared' on the label must be understood to mean that the article was manufactured by him." (33)

The fact that parts of a product are purchased from another does not change the duty of care to the consumer or user. The manufacturer must be certain that the component parts are safe and free from defects. To illustrate, the manufacturer of a crane on a ship was held liable for injuries to a workman when the crane fell because of a defective shackle breaking, and the fact that he purchased the shackle from another made no difference. The Court held, "The purchase of this article (the shackle) which became a component part of the ship, from outside sources does not relieve the defendants from the liability of manufacturer." (34) In the *MacPherson* case the Court said, "It (the manufacturer) was not at liberty to put the finished product on the market without subjecting the component parts to ordinary and simple tests." (35)

Claims Made in Advertising

A manufacturer may be held liable if his product is found to be different from claims made in advertising. In *Bahlman v. Hudson* (36) plaintiff claimed to have relied on the representations of defendant in the purchase of its product. The Court stated:

> ". . . a manufacturer is required to exercise only ordinary care in the manufacture of his products; if he is not negligent he is not liable to a consumer for defects. But by making affirmative warranties, *he has enlarged his duty* beyond that imposed by law, and assumes 'the risk of injuries proximately caused by such misrepresentations.'"

Catalogues and printed matter distributed by a manufacturer for assistance in sales are admissible in evidence "because they set forth representations by the manufacturer" respecting his product. (37)

Protection Against Product Claims

The best protection against product claims is: (1) A

good product, well made; and (2) A liability insurance contract. Insurance companies have the personnel trained to investigate and evaluate claims promptly.

A claim of this character should be met boldly and promptly, and if at all possible, as soon as the claim is reported, the commodity or thing complained of should be obtained, having it first marked in such a way that it cannot be claimed that there was any change in it between the time it was picked up and the time a test or analysis is made. There are many fine chemical and analytic engineers with complete laboratory equipment to accurately check a particular commodity and determine if it contained a deleterious or foreign substance, and, if so, whether the substance was contained in the commodity at the time it left the hands of the manufacturer.

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(1) 140 A L R 197
(2) Thomas v. Winchester
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(3) MacPherson v. Buick Motor Co.,
217 N.Y. 382, 111 NE 1050 (1916)
(4) Carter v. Yardley & Co.,
64 NE (2) (Mass) 693 (1946)
(5) Sicard v. Kremer,
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(6) Bundy v. Ey-Teb,
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(7) Noone v. Fred Perlberg,
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(8) David v. McKesson & Robbins,
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(9) Klein v. Duchess Sandwich Co.,
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(10) Menaker v. Supplee-Wills-Jones Milk Co.,
189A. (Pa. Super. Ct.) 714 (1937)
(11) Heimsoth v. Falstaff Brewing Corp.,
1 Ill. App (2) 28 (1935)
This case was reviewed on the sufficiency of the allegations of the complaint.
(12) Swift & Co. v. Blackwell,
84F (2) (CCA4th) 130 (1936)
(13) Slavin v. Francis H. Leggett & Co.,
177 A (N.J.L.) 120, 36 NCCA 498 (1936)
(14) Gross v. Loft,
185A (Conn.) 80 (1936)
(15) Cassini v. Curtis Candy Co.,
172 A (N.J.L.) 519 (1934)
(16) Coca Cola Bottling Co. v. Stracher,
96 SW (2) (Ark) 14 (1936)
(17) Nemela v. Coca Cola Bottling Co.,
104 SW (2) (Mo App) 773 (1937)
(18) Coca Cola Bottling Co. v. Smith,
97 SW (2) (Tex. Civ. App.) 761 (1936)
(19) Ebers v. General Chem Co.,
17 (NW (2) (Mich.) 176 (1945)
(20) Lindroth v. Walgreen Co.,
407 Ill. 121 (1950)
Evidence disclosed that a "cut-out" to break electrical circuit, provided for in original patent application, had been omitted from manufactured article. Retailer also held responsible with manufacturer because of certain statements of salesladv construed a warranty.
(21) Saganowich v. Hachikian
35A (2) (Pa.) 343 (1944)
(22) Sheward v. Virtue,
126 P (2) Calif. (2) 345 (1945)
(23) Smith v. Peerless Glass Co.,
181 NE (NY) 576 (1932)
(24) Escola v. Coca Cola Bottling Co.,
150 P (2) Calif. 436 (1944)
(25) Henderson v. National Drug Co.,
23A (2) (Pa.) 743 (1942)
(26) Kempf v. Zotos Corp.,
24 NYS (2) 485 (1941)
(27) Elizabeth Arden Inc. v. Brown
107 F (2) (CCA-3) 938 (1939)
(28) Lenz v. Standard Oil Co. of N.Y.,
186 A (N.H.) 329 (1936)
(29) 140 ALR 199
(30) 156 ALR 479, and cases cited.
(31) Marsh Wood Prods. Co. v. Babcock & Wilcox Co.,
240 N.W. (Wis.) 392 (1932)
(32) Coca Cola Bottling Co. v. Massey,
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Nemela v. Coca Cola Bottling Co.,
104 SW (2) (Mo. App) 773 (1937)
Coca Cola Bottling Co. v. Smith,
97 SW (2) (Tex. Civ. App.) 761 (1936)
(33) Thomas v. Winchester
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(34) Seiracki v. Seas Shipping Co.,
149 F. (2) (3 Cir. E. D. Penn.) 98 (1945)
(35) MacPherson v. Buick Motor Co.,
111 NE (N.Y.) 1050 (1916)
(36) Bahiman v. Hudson Motor Car Co.,
288 NW 309, 290 Mich. 638 (1939)
(37) Baxter v. Ford Motor Co.
12 P (2) (Wash.) 409 (1932)
88 ALR 521

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New PRODUCTS & IDEAS

CHEMICAL PUMP—1

An all-purpose chemical pump known as the OKM Model 100-C is announced by O.K. Machine & Tool, Inc. It is a positive displacement pump of the diaphragm type with pump head, all valve components, connecting flanges and nipples made of solid teflon, a product said to be inert to all chemicals and solvents except molten alkali metals and fluorine at elevated temperatures and pressures. The manufacturer states that the pump successfully handles all acids of full or medium concentration, alkaline solutions, petroleum hydrocarbons, and mixtures of these commodities at −50° to 300° F. It is available in one, two and three cylinder models. Each cylinder can be used to pump a different material, or they can be connected in multiple.

AMBRA BODY—2

A new Ambra body created by the scientists of Dragoco, Holzminden, Germany is being put on the market in ampoules. Extended research on the constituents of Ambra led to the development of Ambropur Dragaco, as the new product is called. Ambropur Dragoco, it is pointed out, is not only the 100% odor principle of the genuine Ambra but represents also chemically a copy of the genuine product. Its properties and uses are explained in the English edition of Dragoco Reports, No. 8, 1955 a copy of which may be had by writing to the company.

FAUCET—3

A faucet with a protective, corrosion resistant anti-flash screen in the nozzle has been introduced by Economy Faucet Co. Designed for use with volatile and inflammable solvents or other hazardous fluids, the faucet is manufactured in stainless steel throughout with chemically inert Kel-F seal rings. The manufacturer says that the faucet is fume-tight, that it permits full flow and has automatic, positive shut-off which prevents after-drip. It is designed for quick disassembly for maintenance and cleaning, and the shank is supplied in interchangeable sizes of $\frac{3}{8}$, $\frac{3}{4}$ and $\frac{1}{2}$ inch with tapered threads to allow a tight fit in bung threads of dispensing drums. The faucet is also available in chrome-plated brass for non-corrosive service.

DIAPHRAGM VALVE

The Stockdale Engineering Co. claims that its Wynn straight-through diaphragm valve provides straight-through flow with no dam to trap suspended matter, and is therefore particularly useful for providing two-way, leak-proof control of acids, oils, alkalis, slurries and most hard to handle fluids. The unrestricted path is said to keep pressure up and to eliminate the necessity of clean-out ports. The diaphragm is made of flexible rubber or other material according to use. Packing is not necessary, for the fluid cannot come in contact with the valve stem or other working parts at any time under normal conditions, the manufacturer says.

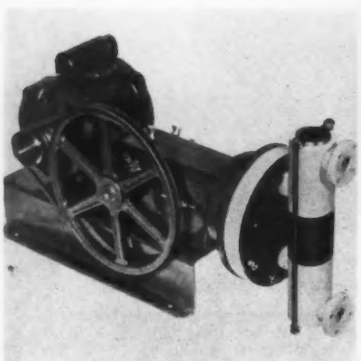
REAGENT

The Fisher Scientific Co. announces a diluent for the stabilized Karl Fischer reagent which extends its usefulness to the lower titers (about 1 to 3). Shelf life is said to be excellent, and no color change is exhibited. The reagent is claimed to speed analytical processes by making possible electrometrical titration instead of oven drying for moisture determinations of alcohols, ketones, esters, fats, oils, petroleum fractions, dehydrated foods, cellulose, sugar, organic acids and many other materials.

DEHYDROACETIC ACID

The Aceto Chemical Co., Inc., reveals the availability of dehydroacetic acid, a product of British Industrial Solvents. The acid appears useful in inhibiting the growth of bacteria and fungi, and is recommended by the agent for use in cosmetics, ointments, toothpastes and industrial products requiring preservation. The relatively low toxicity of the acid suggests applications in the storage of perishable commodities.

1.



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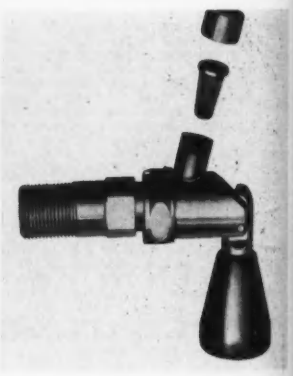

RESEARCH projects frequently necessitate the use of unconventional equipment—sometimes improvisations—to achieve the finely measured results such investigations demand. One such unit, a Podbeilniac type column, is shown above in operation at our Clifton research laboratories. This is used for laboratory distillation—under vacuum—of novel research products. Its columns are silver-lined and each is equipped with automatic reflux head for dependable accuracy and control. Used in support of infra-red, spectrophotographic and other carefully organized studies, it furnishes new and valuable data by which customers ultimately benefit through improved quality, yields and uniformity of the products they buy.

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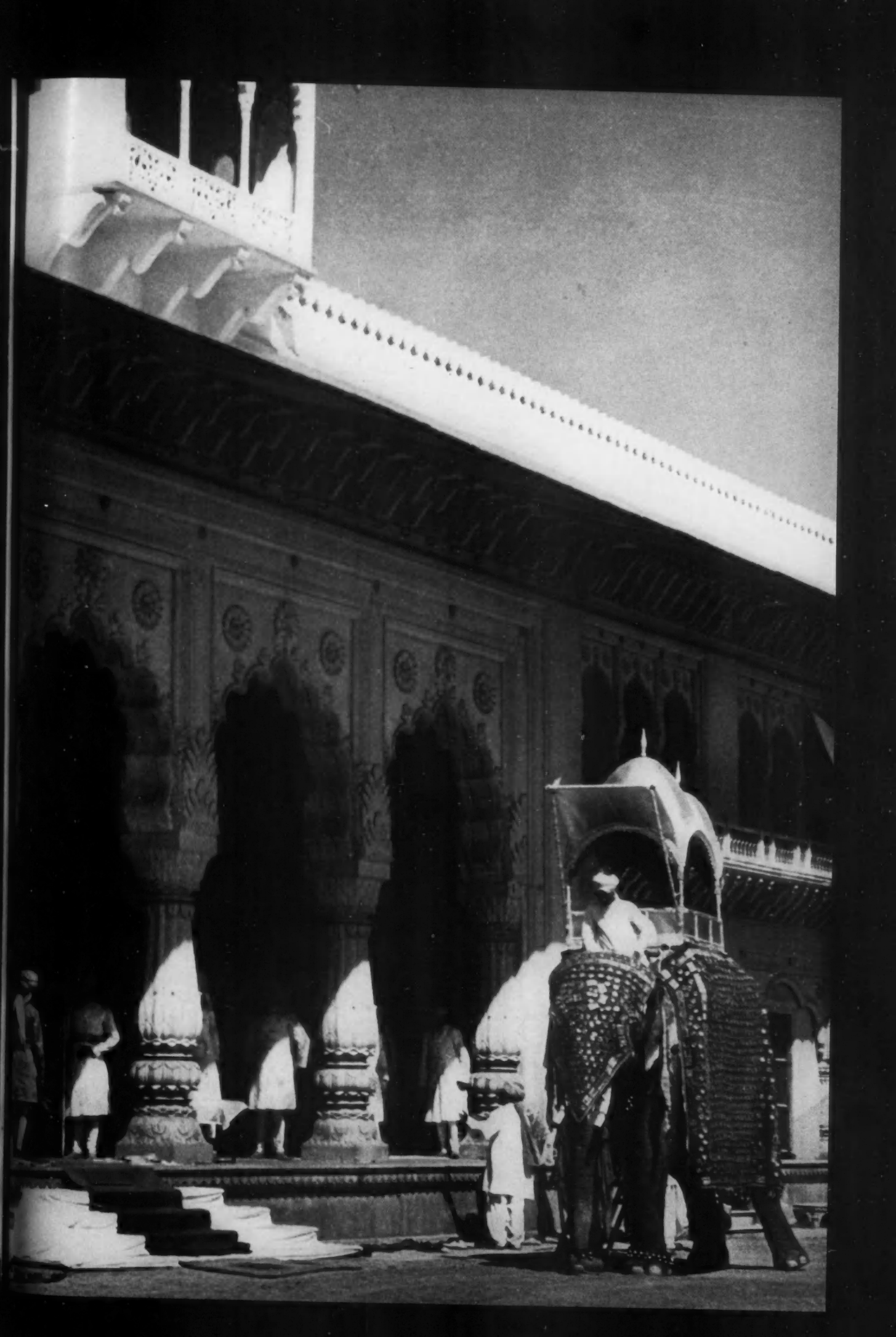
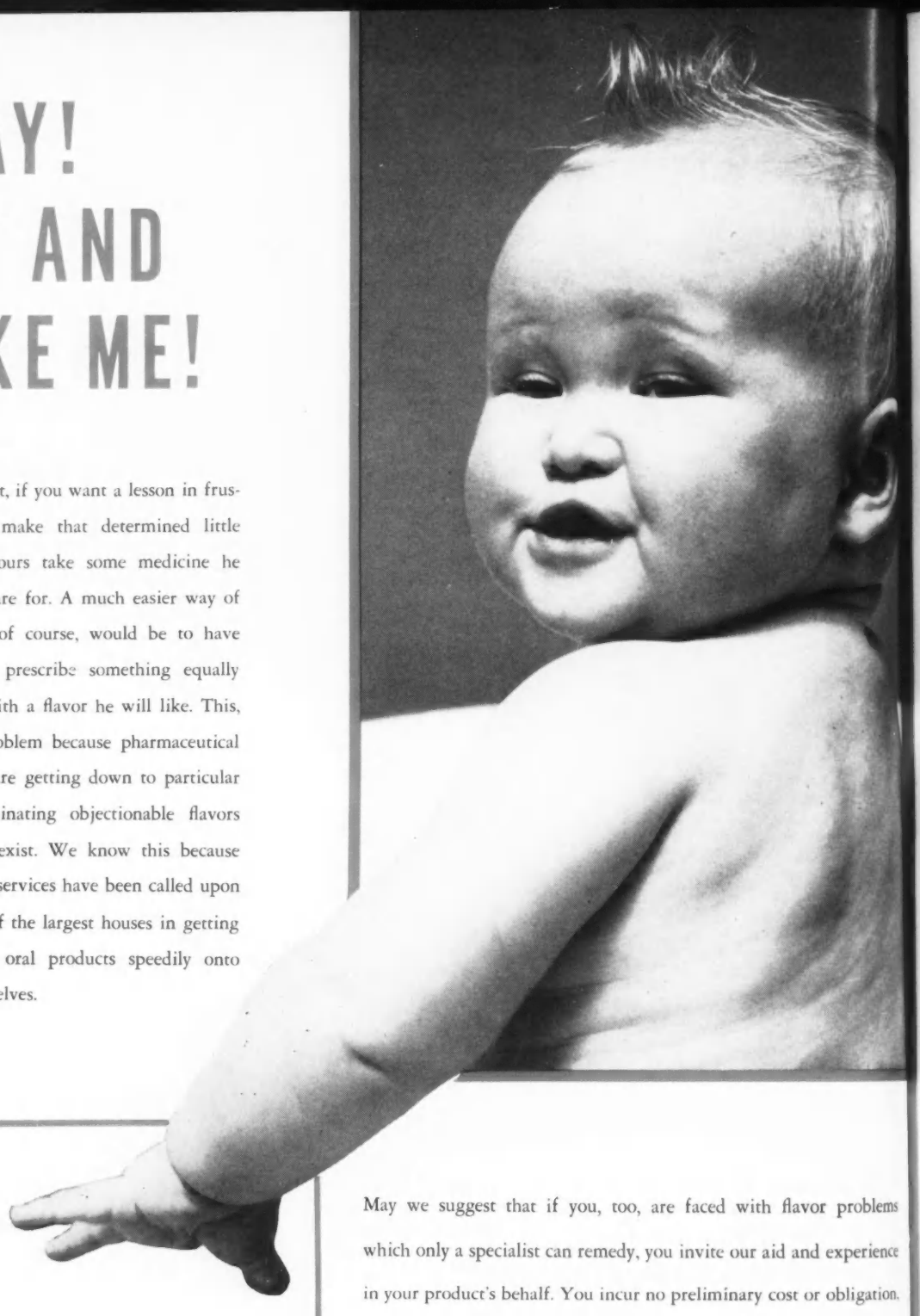


OKAY! TRY AND MAKE ME!

Yes, fond parent, if you want a lesson in frustration try to make that determined little youngster of yours take some medicine he really doesn't care for. A much easier way of handling him, of course, would be to have your physician prescribe something equally effective, but with a flavor he will like. This, today, is no problem because pharmaceutical manufacturers are getting down to particular cases and eliminating objectionable flavors wherever they exist. We know this because our own flavor services have been called upon to assist some of the largest houses in getting better flavored oral products speedily onto their dealers' shelves.



May we suggest that if you, too, are faced with flavor problems which only a specialist can remedy, you invite our aid and experience in your product's behalf. You incur no preliminary cost or obligation, and our service is strictly confidential.

For GOOD TASTE in Pharmaceuticals *Consult* . . . . . **FRITZSCHE** *Established* 1871 *Brothers, Inc.*

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SOAP SECTION

Earl B. Osborn
President, Association of American Soap & Glycerine Producers

ANNUAL MEETING OF

American Soap & Glycerine Producers

- *Election of officers*
- *Awards for glycerine research*
- *Technical research papers*
- *Guest speakers*

THE annual meeting of the Association of American Soap & Glycerine Producers, Inc. in New York City January 25-27 was attended by over five hundred executives and representatives of more than one hundred soap and allied industry firms. During the three-day business sessions, the industry leaders heard and discussed some thirty papers by scientists and business experts on the latest development in the soap, synthetic detergent and glycerine fields, as well as reports on market research, merchandising and general business outlook for the nation.

Outgoing Association President E. W. Wilson, a vice-president of Armour and Co., reviewed the organization's 1955 activities as it prepared to enter its thirtieth year of operations. Mr. Wilson was succeeded as president of the Association by Earl B. Osborn, president of Economics Laboratory Inc.

Other officers elected at the meeting were: W. H. Burkhart, president, Lever Brothers Co., vice-president for the East; A. W. Schubert, vice-president, Emery Industries, vice-president for the Mid-West; A. K. Forthmann, president, Los Angeles Soap Co., vice-president for the Far West. Nils Dahl, general manager, John T. Stanley Co., was elected treasurer.

Special convention features included the formal presentation to three scientists of awards totalling fifteen hundred dollars for glycerine research work done in 1955. The top award of $1,000 went to Dr. Reed A. Gray of Merck & Co. for his discovery that glycerine increases the effectiveness of antibiotics against plant diseases. The other two awardees are Dr. Karl H. Lauer, University of Alabama professor, who was honored for his process using glycerine solutions of lime to convert by-product sodium sulfate into caustic soda; and Dr. Eugene P. Kennedy, University of Chicago biochemistry professor, for his studies of the biosynthesis of phospholipids, including the role of glycerine derivatives as precursors of these compounds found in all living tissue.

Two principal guest speakers were Eric Johnston, president of the Motion Picture Assn. of America, who spoke on "Who's Sabotaging Our Economy" and Dexter Keezer, vice-president of McGraw-Hill Publishing Co., who discussed business prospects for the nation as a whole.

This year's convention marks the fifth year of activity by the industry association's Fatty Acid Division. A report on world trends in fats and oils in 1956 was delivered by E. L. Burtis, an official of the United Nations food and agriculture organization.

Among the talks were two discussions on automation as it affects processing operations and marketing procedures. The speakers were Prof. Ernest H. Schell of the Massachusetts Institute of Technology, and Dr. C. R. DeCarlo, Applied Science director of International Business Machines Corp.

A top government spokesman, Edmond F. Mansure, head of the U. S. General Services Administration, noted as one of the biggest buyers of soap in the nation, addressed the industry leaders on "Doing Business With Your Government."

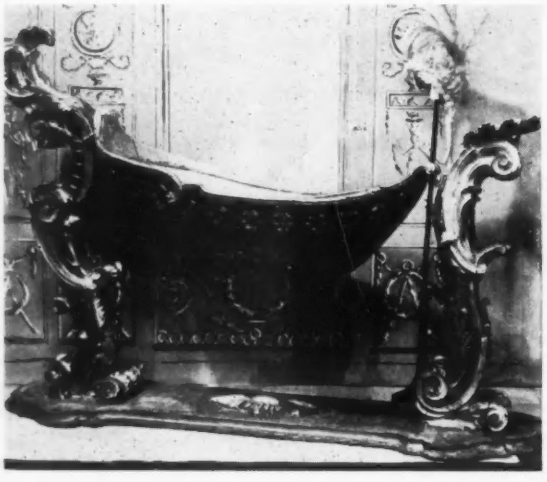
Another talk of widespread interest to many American municipalities as well as industry groups, dealt with a cooperative industry study of the effect of synthetic detergents on water supply and sewage treatment. The talk was presented by the chairman of the Association's study committee, Frank Coughlin of Procter and Gamble.

The soap industry leaders also heard a discussion of the impact of nuclear energy on industry by Dr. Lauchlin M. Currie, vice-president of the Union Carbide Nuclear Co., a subject of interest to all.

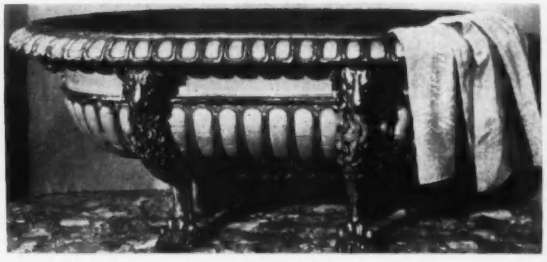
The Bathtub through the Ages: Comment on Man

A special feature of the convention of Soap and Glycerine Producers was a fascinating display of devices for bathing through the ages. From the time of the Roman tub to the modern bathroom covers a lot of human history, and man's effort to keep himself clean during that span could serve as a basis of interpretation for the sociology, psychology, economics and morals of the different periods—and, not incidentally, also reveal a hilarious insight into the creature's foibles and vagaries. A few of the extraordinary contraptions into which he has squeezed his body in the name of cleanliness are illustrated on this page.

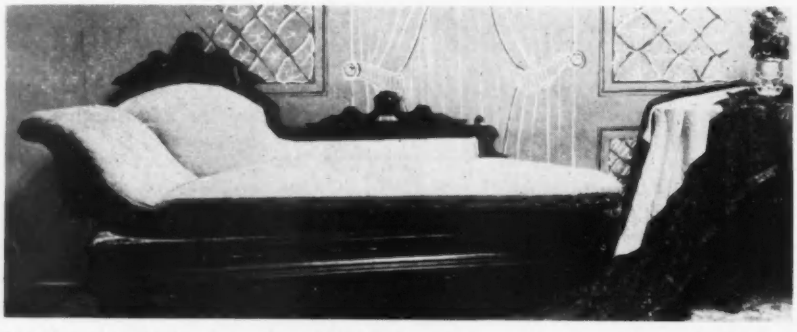
American Virginia stool shower: Walnut stand with hose attachment. The lever was worked to pump water and move brush. About 1830-40. It's an example of American ingenuity.



A French Louis XVI gilded cradle tub in which the bather reclined in a cradle and stretched his legs over a column.

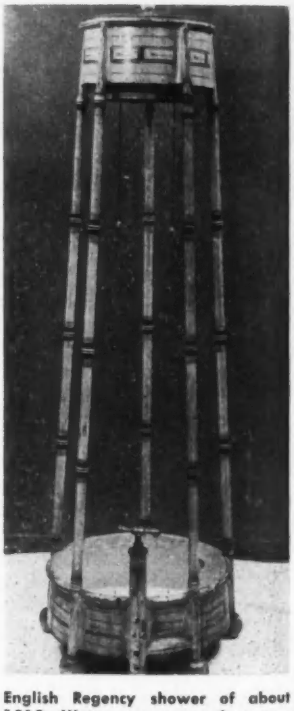


European Empire tub of early 19th century, decorated with ornate ivory and gold leaf, was an early ancestor of modern tub.



Victorian sofa tub, American, about 1880-90. Made of carved walnut with a removable sofa top and tub underneath, it doubled as a parlor piece. A soap dish was included but no drain.

Sitz tub, American, about 1850: Many varieties were offered. The bather sat in the tub with legs extended out.



English Regency shower of about 1810. Water was pumped to top, dropped on bather, and reused.

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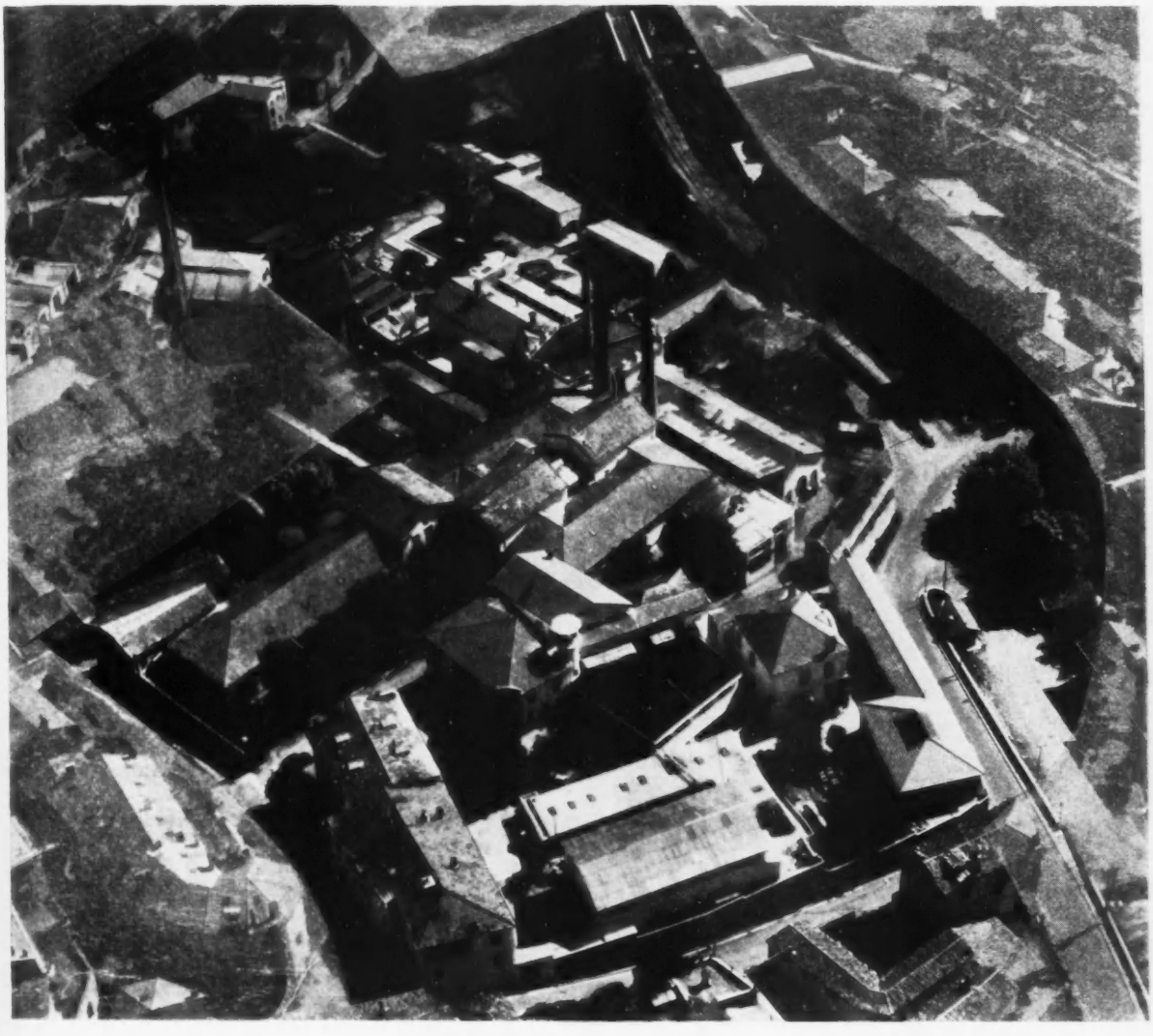

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Already proved by a small trial
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We will willingly place at your disposal absolutely without obligation and free of all costs either 1-gram of AMBROPUR "DRAGOCO" 100% of 10-grammes of AMBROPUR "DRAGOCO" in 10% solution for your own trials.

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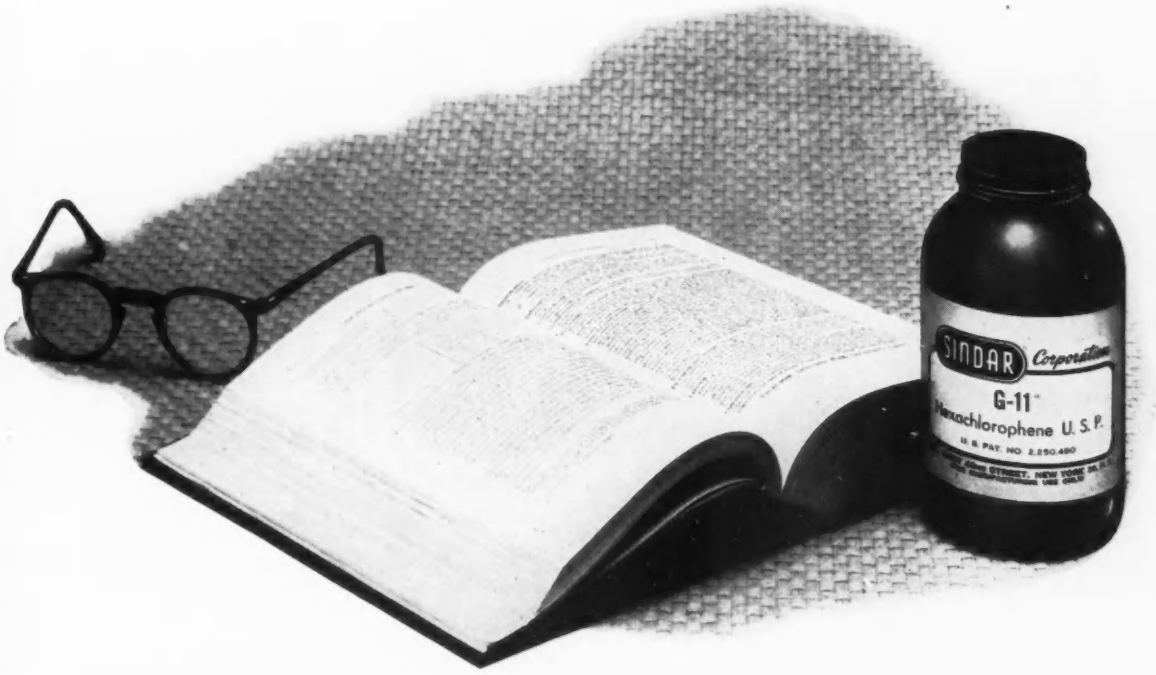

HEXACHLOROPHENE—G-11®-and HEXACHLOROPHENE LIQUID SOAP NOW U.S.P.

We are pleased to announce that hexachlorophene and hexachlorophene liquid soap have been included in the fifteenth revision of the Pharmacopoeia of the United States.

As the discoverer and producer of hexachlorophene, we welcome this further recognition by the medical profession and the privilege of joining the U.S.P. list of best-known and most important Hexachlorophene liquid soap is the only antiseptic soap recognized by the U.S.P.

G-11® is Sindar's trade-mark for hexachlorophene.

SINDAR® *Corporation*
Industrial Aromatics and Chemicals
330 West 42nd Street • New York 36, N. Y.

Packaging and Promotion

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1. LANCOME

Lancome has re-designed all of its standard perfume boxes. The new package, created in France, is smooth white with embossed gold decor. The sides and top are set off by an outline gold panel with a curved corner motif. In the center of the front panel is the Lancome rose insignia encircled by a gold band. Perfumes in the new packaging include Magie, Seul Tresor, Tropiques and Qui-Sait?. Prices on the products are unchanged.

2. PRINCE MATCHABELLI

Sequin butterfly lapel-pins and flower-decorated cartons are the seasonal dress for spring of the Prince Matchabelli colognes. Both the 2 and 4 ounce sizes of Wind Song, Beloved, Stradivari, and Crown Jewel are offered at regular prices in February in the special crown cut-out box to which the butterfly pin is attached. The theme of the promotion is "Catch the spirit of spring with cologne by Prince Matchabelli."

3. LEVER BROTHERS

Lux soap is now presented in a gleaming gold foil wrap. The Lever Brothers Co. product has been on the market for 30 years.

4. BARBARA GOULD

Winter Wonder Lotion is the newest addition to the Barbara Gould line. The greaseless all purpose emollient is tinted a pink tone. The 8 ounce bottle has an established retail price of $2, but as a special introductory offer is presented for $1. A collar which fits over the neck of the bottle is used to promote the special sale.

5. AR. WINARICK

Ar. Winarick, Inc. packages its Jeris hair creme for men in a display carton which is said to protect the product during shipment. The main section of the two-piece display has a cut down front with sloping side panels which permits visibility of the container from three sides. The second part of the carton, a riser which forms the back of the display, during shipment can be tucked into the front panel to provide addi-

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tional protection. The carton is printed in dark green, yellow and red on white patent coated board. The design features the trade name in a panel of yellow on the riser. The product itself is contained in a gold dispenser.

6. BRECK

Breck Hair Set Mist, an aerosol spray hair fixative, is now being introduced nationally by John H. Breck, Inc. The gold package has a four-color flower illustration on the front label and is topped with a pink cap. A gold foil counter display unit and a similar floor display stand are available for promotional purposes. The 4½ ounce can retails at $1.25, the 11 ounce can at $2, plus federal tax.

7. WALGREEN

Walgreen's new Gold Lace solid cologne is offered in a package produced collectively by three manufacturers: the decorated opal jar is from the Hazel-Atlas Glass Co.; the cap is by Buckingham Associates; and the carton is from Ace Carton Co. The name Gold Lace is the source of the motif used on the jar and carton.

8. HOUBIGANT

As part of an extensive Quelques Fleurs promotion scheme, Houbigant is offering its seven products in the scent with plans and seeds for a miniature French garden flower bed included in each package. Also, the Quelques Fleurs products will be associated with fashion accessories from leading manufacturers by promotional tie-ins. The company is introducing Refreshence, a new body cologne with deodorant properties, in the odor, and has repackaged two of the products in the line. An 8 ounce bottle of the cologne sells for $2, plus tax. The promotion will be backed by extensive advertising in leading magazines.

9. TUSSY

Tussy Cosmetiques is presenting this month its new Satin Blend liquid rouge. It comes in a cylindrical glass bottle with white lettering and a tapered gold metal cap. The rouge is available in three shades—crimson, coral and pink. The ¼ ounce bottle retails for $1.

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packaging and promotion

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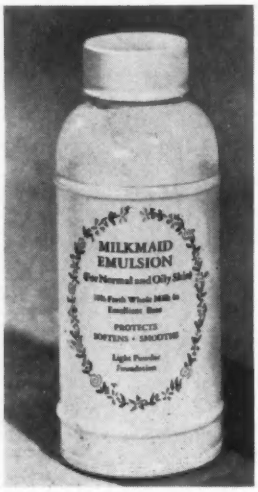

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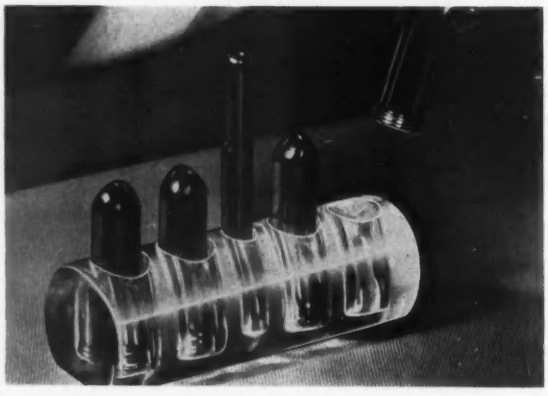


14.

10. SHULTON

Available for the February market is a special promotion package from Shulton, Inc. Desert Flower hand and body lotion and Desert Flower toilet water are offered in a set which contains a 2 ounce bottle of each. The packaging is in white and gold. The $1.50 value sells for $1 plus tax.

11. FLOMAR

The Flomar Products Co. packages its line of bath oils in ceramiced containers, which eliminates tattered and shelf-soiled packages. The oils are designated as bubbling and luxurious, and come in Apple Blossom, Carnation, Garden Bouquet and Lilac fragrances. A 16 ounce size retails at $1.

12. MILKMAID

Milkmaid Emulsion, a product of Milkmaid, Inc., is bottled in a milk-white container decorated with pastel flowers. The blend of whole milk and special emollients, said to be beneficial to skin and to act as a protective, is offered in types for dry or oily complexion. It is also available in a plastic container which is recommended for travel. The 4 ounce plastic container is $1.50, the 6 ounce glass bottle $2, plus tax.

13. YARDLEY

Yardley of London has made available a special jumbo size of its shaving foam for $1.25. The aerosol shaving preparation is offered in an exact reproduction of the container which won the first award in the 1954 aerosol shave packaging competition.

14. PAR SALES

A dressing table accessory which holds four lipsticks and a lip brush is made by the Par Sales Co. Made of styrene, it is available in clear, coral pink and blue. The packaging is red and silver. Without lipsticks the item is $2.

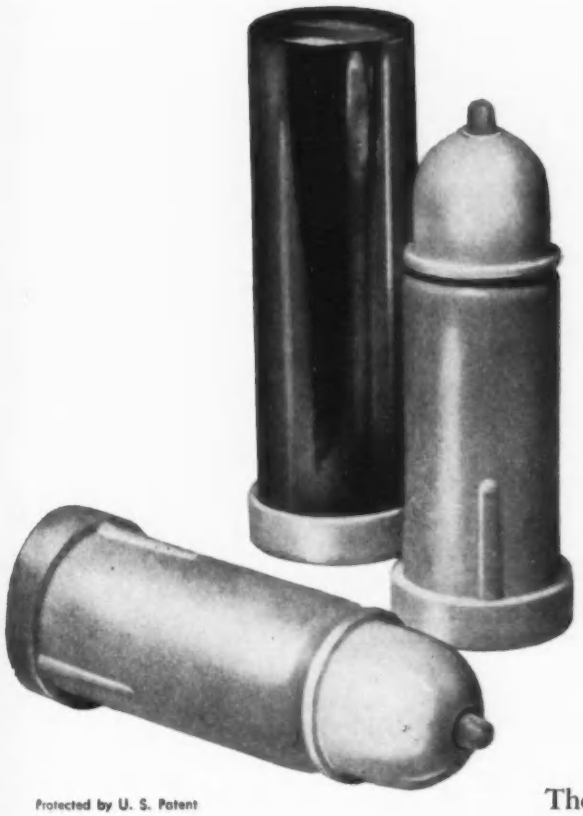
RICHFORD SPILLPROOF PERFUME FLACONS

The magic, purse-sized perfume flacon still making sales history is proud of its volume producing running mate, the—

RICHFORD TOUCH-N-FLO*

PURSE DISPENSER

*TRADE MARK



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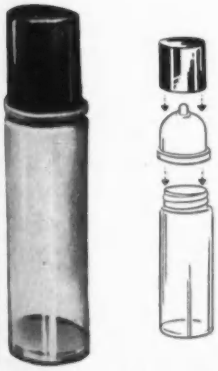
TOUCH-N-FLO will not leak, yet the contents flow easily with a gentle touch to the skin. Unbreakable plastic bottle and sure-acting dispenser handsomely covered with a snug gold metal cap. Contents 10 cc.



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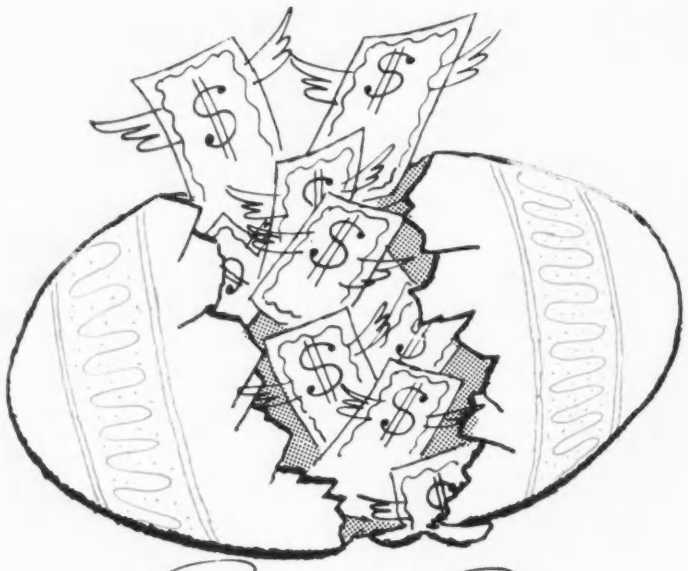

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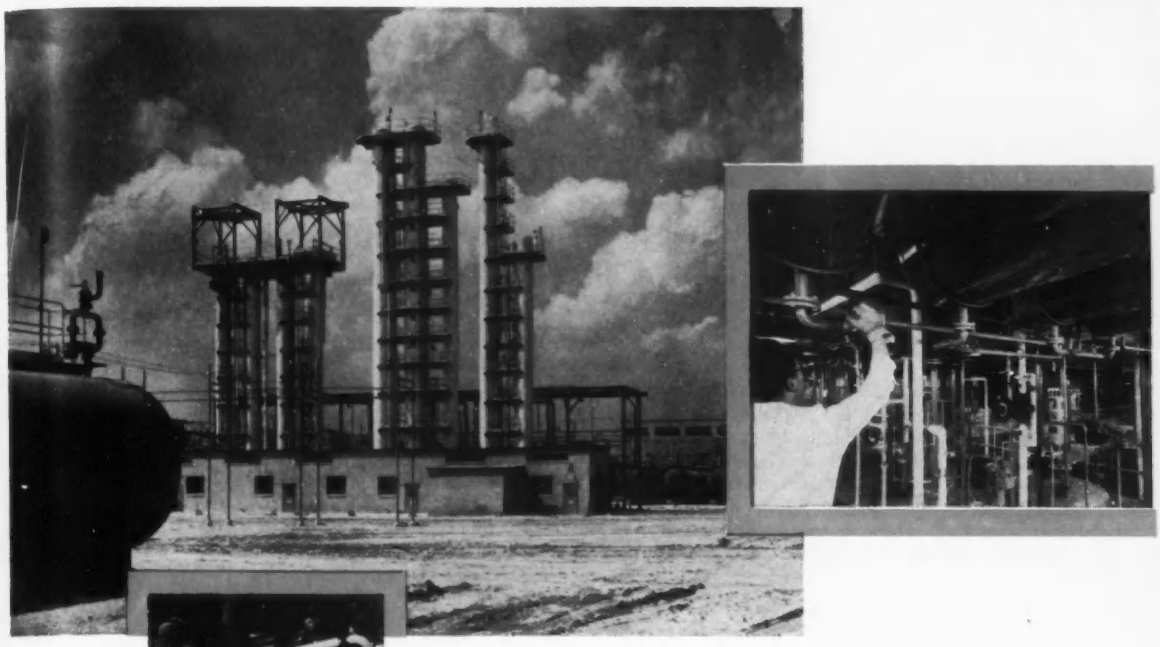

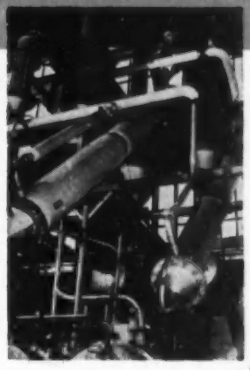

1954 FLAVOR MATERIALS PRODUCTION

Morris B. Jacobs, Ph.D.

The data of production and sales of flavoring materials for 1954, classified as benzeneoid and naphthalenoid; terpenoid, heterocyclic and alicyclic; and acyclic groups are analyzed

THE United States Tariff Commission relatively recently issued its Report No. 196 Second Series, "Synthetic Organic Chemicals—United States Production and Sales, 1954 [GPO Cl. No. TC 1.9: 196]. This report, as those which preceded it, contains three major parts and an appendix.

Part I is concerned with the production and sales of tars, tar crudes, and crudes derived from petroleum and natural gas.

Part II is concerned with the production and sales of intermediates and finished synthetic organic chemicals by groups. One of these groups is that of flavor and perfume materials.

Part III contains an alphabetical list of individual products by groups and the names of manufacturers. This section also contains information relating to flavor and perfume materials.

Appendix C contains a glossary of the common or trivial names of certain intermediates, among which are included some flavoring materials, as used in industry and their equivalent standard or Chemical Abstract names.

Production and Sales

The report of the Tariff Commission covers the production and sales data of flavor and perfume materials derived from natural products by actual chemical processing and those materials derived from coal tar. It does

not contain data on purely natural products such as floral essences, essential oils, and other materials obtained by simple extraction or by distillation from natural vegetable and animal sources.

For the purposes of the Tariff Commission report and also for this one, the flavors and perfume materials are grouped, depending on their chemical structure, as either cyclic or acyclic substances. The cyclic substances are additionally grouped as (a) benzenoid and naphthalenoid substances and (b) terpenoid, heterocyclic, and alicyclic substances.

It is regrettable that for a number of important flavor and perfume materials such as vanillin and ethyl methylphenylglycidate (ethyl alpha, beta-epoxy-beta-methylhydrocinnamate) it was not possible for this agency to present any data. It is also regrettable to note a marked reduction in the number of aromatics about which data is presented. Thus in the data for 1953, 71 synthetic chemicals were included in the report whereas in the 1954 data only 41 synthetic chemicals are included in the individual data. Many of the compounds not included in the 1954 data are those prepared in smaller quantity.

Sales in 1954

Sales in 1954 totaled 31 million pounds, valued at 47 million dollars which were virtually the same as sales and values in 1953.

Production of flavor and perfume materials in 1954 totaled 35 million pounds for the entire group as compared with the 34 million pounds reported in 1953. Thus the 1954 production was 1 million pounds greater than that for 1953 and 7 million pounds greater than that for 1952.

Benzenoid Compounds

The production of benzenoid and naphthalenoid flavor and perfume materials in 1954 was 13 million pounds representing a 14.3 per cent increase over the 11 million pounds manufactured in 1953. Sales in 1954 of the benzenoid and naphthalenoid group totaled 11 million pounds, valued at 14 million dollars compared with 10 million pounds, valued at 13 million dollars in 1953.

The substance produced in greatest amount in this group of aromatics and having the largest sale was artificial oil of wintergreen, that is, methyl salicylate. In 1954, the production of this compound totaled 2.9 million pounds, a decrease of 8.7 per cent from the 3.2 million pounds produced in 1953. Sales of methyl salicylate totaled 2.8 million pounds valued at 1.3 million dollars. These values were about the same as those for 1953.

Information is given for only 19 compounds of the benzenoid and naphthalenoid group in 1954 as compared with 26 in 1953. In order of magnitude (with the exception of methyl salicylate, data for which is given in the preceding paragraph) the production in pounds was: anethole (934,000) (representing an increase of 76 per cent over that made in 1953), phenethyl alcohol (886,000), benzyl acetate (624,000), benzyl alcohol (466,000), benzyl benzoate (445,000) alpha-amylcinnamaldehyde (261,000), benzophenone (202,000), anisaldehyde (189,000), eugenol (140,000), isoeugenol (88,000), phenethyl acetate (54,000) methyl cinnamate (50,000), benzyl salicylate (40,000) isobutyl phenylacetate (32,000), methyl benzylacetate (26,000), isobutyl benzoate (8,000), benzyl cinnamate (7,000), and benzyl propionate (3,000).

All other benzenoid and naphthalenoid materials manufactured for flavor and perfume purposes totaled 5,392,000 pounds. The total production for all cyclic compounds was 21,870,000 pounds of which 12,745,000 were in the benzenoid group and 9,125,000 were in the terpenoid group. The Commission was able to report statistics on only 13,165,000 pounds and was unable to give individual data for 8,705,000 pounds of cyclic compounds.

Terpenoid Compounds

Information on production in the 1954 report is given for 23 compounds in the terpenoid, heterocyclic, and alicyclic group as compared with data for 33 in the 1953 report. The production of this group of perfume and flavor materials was 9.1 million pounds in 1954 compared with 7.3 million pounds in 1953, representing an increase of almost 25 per cent.

Sales of terpenoid, heterocyclic, and alicyclic compounds were 7.2 million pounds valued at 12.8 million dollars in 1954. In 1953, on the other hand, sales were 6.1 million pounds valued at 8.7 million dollars.

The most important aromatics in volume of production in the terpenoid category were the terpineols, alpha-, beta-, and alpha- + beta-terpineol. The production of these compounds totaled 2.48 million pounds; sales were 2.38 million pounds valued at 0.5 million dollars. The most important compounds from the point of view of value of sales were the synthetic menthols; 364,000 pounds of these substances were produced; sales totaled 265,000 pounds valued at $1,600,000.

Other important aromatics in this category were coumarin of which 418,000 pounds were produced, 426,000 pounds were sold valued at $1,100,000 and geraniol of which 417,000 pounds were produced, 429,000 pounds were sold valued at 736,000 dollars.

Data on production of other compounds in the terpenoid, heterocyclic, and alicyclic group were the following (production over 100,000 pounds): heliotropin or piperonal (261,000), safrole (256,000), terpinyl acetate (237,000), citronellol (223,000), isobornyl acetate (219,000), hydroxycitronellal (169,000), beta- and alpha- + beta-ionone (151,000), linalool (142,000), alpha-, beta-, and alpha- + beta-methylionone (134,000), and linalyl acetate (127,000).

Compounds in the terpenoid, heterocyclic, and alicyclic category for which the production was over 10,000 pounds were: cedryl acetate (63,000), citral or geranial (51,000), eucalyptol or cineole (35,000), geranyl acetate (22,000), and alpha-ionone (16,000).

Compounds in this category for which the production was over 1,000 pounds were: Rhodinol (8,000), citronellyl acetate (5,000), geranyl formate (5,000), citronellyl propionate (4,000), and vetivenyl acetate (4,000).

All other terpenoid, heterocyclic, and alicyclic materials, including chemically modified essential oils production amounted to 3.3 million pounds with 1.96 million pounds sold at a value of 4.2 million dollars. This may be compared with 2.6 million pounds produced in 1953 with 1.7 million pounds sold at a value of 1.9 million

FLORAL BOUQUET #7653 at $18.75 per pound
Very pleasing . . . suitable for year 'round use . . . especially adaptable in perfumes, toilet waters, colognes and dusting powders.

APPLE BLOSSOM BOUQUET #7622 at $12.00 per pound
Another year 'round compound for perfumes, colognes, toilet waters . . . lends appealing freshness to face powders, dusting powders, cake make-up . . . fine for use with other compounds to enhance the light floral note.

BOUQUET "C" #7569 at $11.60 per pound
Outstanding formulation for exquisite toilet soaps, face powders and dusting powders . . . exceptionally stable insuring odor retention over long periods of shelf life . . . will not discolor.

BOUQUET "D" #7618 at $12.50 per pound
Distinctively different . . . individual . . . imparts delightful effect and lasting freshness with clear top note retaining full-bodied fragrance . . . very versatile . . . can be used alone or in conjunction with presently used perfume compounds.

BOUQUET EXOTIQUE #6270 at $27.50 per pound
Entrancing . . . oriental bouquet . . . captures the fascination of the Orient in fragrance . . . extremely powerful and cloying.

ROSE BOUQUET #7454 at $6.25 per pound
We have captured the deep, full fragrance of the red rose . . . amazing similarity to natural rose fragrance . . . outstanding performance in hand creams . . . lotions . . . wherever the rose note is indicated . . . long lasting . . . deep penetrating . . . residual odor lasts with minute quantities needed for the finished product.

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dollars. It is to be noted, however, that in the 1953 statistics some data was given for compounds for which the production was of the order of 2,000 pounds or less. Production and sales of these compounds are included in the general data in the 1954 report.

Acyclic Compounds

Production of flavor and perfume materials in the acyclic group totaled 13.4 million pounds in 1954 as compared with 15.4 million pounds in 1953. This represented a decrease of 12.8 per cent. Sales of compounds in this category in 1954 totaled 12.6 million pounds valued at 20.5 million dollars, a marked decrease from the 14.6 million pounds valued at 25.1 million dollars sold in 1953.

By far the most important member of this group is monosodium glutamate. Production of this compound in 1954 amounted to 12.8 million pounds; sales amounted to 12.2 million pounds valued at 19.8 million dollars. Thus the production of monosodium glutamate amounted to about 95 per cent by weight of the total amount of the acyclic compound group. The drop in production and sales of the acyclic category is thus due to the drop in production and sales of monosodium glutamate in 1954. It is also to be noted that the production in pounds of monosodium glutamate was equivalent to about 60 per cent of all the compounds comprising both the benzenoid and the terpenoid groups and that the value of the sales of monosodium glutamate was equivalent to 75 per cent of the value of the sales of the entire benzenoid and terpenoid groups.

Data are given for only three other compounds in the acyclic group, namely, ethyl butyrate (141,000 pounds produced, 156,000 pounds sold valued at $117,000), amyl butyrate (isoamyl butyrate) (22,000 pounds produced), and allyl caproate of which 4,000 pounds were made.

Individual statistics were not presented for compounds in this category whose production totaled 0.5 million pounds, some 325,000.

In a subsequent issue of the Flavor Section, additional analyses of production, sales, and manufacturers of flavor materials will be made.

Flavored Notes

A number of bills to regulate and control the addition of chemicals to foods were introduced in Congress during 1955. None of these bills was acceptable to all the parties to be affected by them. Recently, the outline of a bill, in which enforcement is to be accomplished by the use of a procedure of declaratory judgment instead of an injunction procedure has been suggested as a compromise. In the suggested bill it will still be necessary for those firms proposing to utilize a new additive in a food to submit an application to the Secretary of the Department of Health, Education, and Welfare and to submit the scientific data substantiating the safety of use of the compound in foods. Then if the Department of Health, Education, and Welfare refuses permission for the use of the material, the applicant can ask the courts for a declaratory judgment to the effect that the scientific evidence submitted with the application is sufficient to support the application. As an alternative procedure, the manufacturer can market the chemical additive after notification to the Secretary of the Department of Health, Education, and Welfare who will then have to ask for a declaratory judgment.

It has been considered for many years that marbling of beef was a major factor in evaluating the flavor of the meat. Recent work by the Department of Agriculture carried out at Beltsville, Md. on the use of stilbestrol (diethylstilbestrol) a synthetic organic chemical having estrogenic (female hormone) activity showed that this compound assists in the growth of steers and aids in their ability to convert their feed to meat. The beef produced has less fat but is nevertheless more tender and flavorsome.—*M. B. J.*

FEMA Convention Is Scheduled for May

Robert Krone, convention chairman of the 47th annual convention of the Flavoring Extract Manufacturers' Assn., announces that a well integrated program of talks on subjects of timely interest to the flavoring field is being worked out and will be announced in detail by the board of governors following its meeting on February 17.

The meeting is to be held at the Traymore Hotel in Atlantic City, N. J., May 13-16.

Reisman Corp. Represents Schlitz Brewing Co.

H. Reisman Corp. announces that it is the Eastern sales representative of Debittered Brewers' Yeast, U.S.P., for the Yeast Sales division of the Joseph Schlitz Brewing Co. of Milwaukee. The yeast is supplied as a fine flake and also in a granular form. Samples and quotations are available upon request.

Florida Amends Root Beer Regulation

The Florida Department of Agriculture has amended its Regulation No. 8, Section 3, by deleting the word "solely" and substituting "primarily." It now says that root beer, sarsaparilla or similar drinks need not bear the word imitation if their flavor is derived primarily from plant extractives.

Industrial Sugar Users Oppose House Act

The Flavoring Extract Manufacturers Assn. on January 16 submitted a statement to the Senate Finance Committee on behalf of the Industrial Sugar Users. It was prepared in opposition to H.R. 7030, which was passed by the House of Representatives at the last session of Congress and is now pending before the Senate committee.

The statement recommends an extension of the Sugar Act of 1948 for an additional three year period, with necessary amendments to Section 201 that would provide an annual quota of sugar of not less than the per-capita averages that would return a reasonable profit to the producers.

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Useful addition to present standard fixatives

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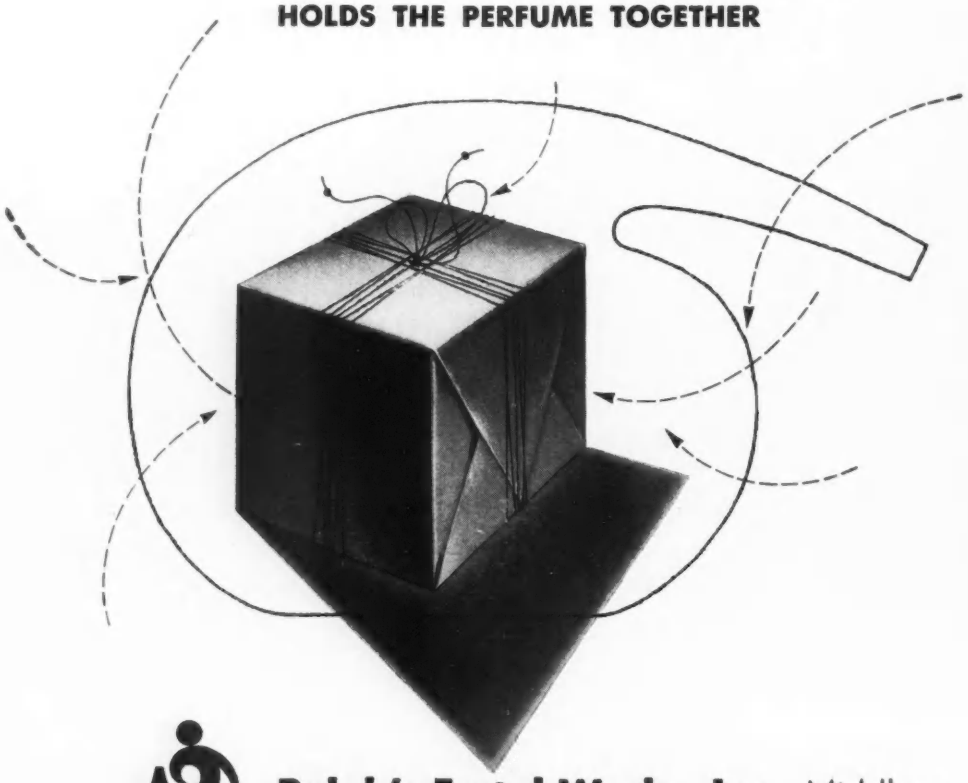

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Extraolfactory COMPONENTS OF FLAVOR

Extraolfactory components must at times play the major roles in the identification of the flavor of substances

Edward C. Clark, M.D. and Henry W. Dodge, Jr., M.D.*

Originally stimulated by interviewing an anosmic patient who stated she could still perceive flavors, we turned to the literature on the subject of flavor and found that uncertainty continues to exist as to the importance of olfactory and extraolfactory sensations in this regard. Because of the availability of five patients whose olfactory nerves had been surgically proved to be destroyed, either by basofrontal brain tumors or by cranial trauma, the opportunity presented itself for more definitive study.

Method

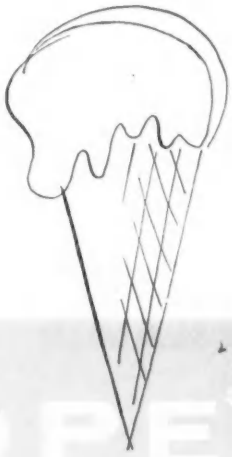
The five patients (one the subject of a published case report[1]) mentioned in the preceding paragraph were studied, together with a group of 10 normal controls. The patients without the sense of smell were of both sexes and of varying ages and occupations and had been anosmic for varying periods. The controls fell into similar categories. Smokers and nonsmokers were present in both groups. One control had complete dentures. All subjects were free of nasopharyngeal and sinus disease. In each instance the sense of taste and the somatic sensibilities of the mouth were intact. All of the controls gave normal olfactory responses as well. The anosmics, of course, could not perceive odors. Because we could not find a test of flavor directly applicable to the situation, we devised our own. The details of this test are reported elsewhere.[2] Briefly, however, it consisted of 31 items. These were vegetables and fruits given to the subjects in different consistencies at room temperature. The test for each subject was similar in detail in every instance and was given in two separate parts on successive days or weeks so as to prevent fatigue. All solid foods were cubed so as to prevent easy identification of the substance by its shape. The subjects were blindfolded during the procedure. Their mouths were rinsed with water, and several minutes were allowed to elapse between the giving of one test food and the next. As each food was given, the subject was requested to identify it. If he could do this he was asked whether he could perceive the flavor.

Results

Normal Controls.—Analysis of the responses to testing of the normal controls revealed considerable variation in the accuracy of their answers. Although women tended to do better than men, experience with cooking was not a prerequisite for superior performance. As might have been expected, these subjects did best when presented with standard dietary items in their common vehicles and in their usual consistency. The one normal control with complete dentures did poorly with the test foods (see figure, column e). Possibly his dentures affected his perception of flavor. Some of the normal controls tended to pay more attention to oral sensations than did others. It must be reiterated that all of these patients were blindfolded and were deprived, therefore, of visual recognition of the food.

*Mayo Clinic, Rochester, Minn. Paper read before the Section on Nervous and Mental Diseases at the June 9, 1955 meeting of the American Medical Assn. Reprinted from the Journal of the American Medical Assn., Vol. 159, No. 18, December 31, 1955.

So much for so little...



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FINE CHEMICALS

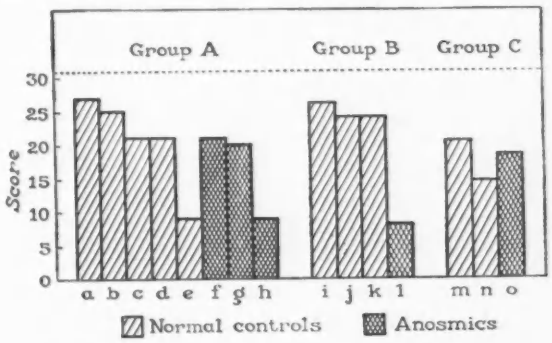
Anosmic Patients.—The scores made by anosmic patients also varied considerably. While two of the anosmic housewives (columns f and g) received the highest scores of the group, experience in cooking was not necessarily related to the best performance. As might have been expected, the more expert anosmic women did better than the one young man (column o) who had lost his sense of smell. As with the normal controls, anosmic patients were more accurate when presented with foods commonly eaten in their standard vehicle and in their usual consistency than when foods were in anywise unfamiliar. Of the anosmic patients who could recall having been able to detect odors, one (column h) believed that she had been largely deprived of her ability to discern flavors. Another woman who had lost her sense of smell at the time of operation (column g) stated that she had noticed no difference in the flavor of foods before and after complete destruction of her olfactory nerves. Two other such patients (columns f and o) observed that they had lost their ability to discern a few relatively unimportant flavors along with their loss of the sense of smell. One anosmic bookkeeper (column l) could not recall ever having recognized odors. When questioned she stated that she could perceive flavors well; nevertheless when tested she did poorly. However, she often mentioned the color and appearance of the food that she thought she had been given in the test, and she seemed to be hampered more by the blindfolding than were some of the other anosmic as well as the normal patients.

Comparison of Normal Controls and Anosmic Patients.—To clarify relative abilities we assembled the normal controls and the anosmic patients in three separate groups, as is shown in the figure. The composition of these groups is given in the accompanying legend. No anosmic patient did as well as the best normal controls in identifying test foods; however, some of the subjects without the sense of smell did as well as some of the normal controls and better than the poorest control (column e). As was expected, some of the anosmic patients did very poorly (columns h and l).

On most occasions, when the test food was correctly identified either by an anosmic or by a normal control, the subject declared that he could perceive the flavor. In a few instances, however, members of both groups identified a food by physical characteristics but stated that they could not perceive the flavor. Conversely, on occasion members of both groups would misidentify some food and state that they could discern the flavor. For example, one normal person identified a pear as a peach and stated that she could perceive the flavor of peach.

Comment

Contrary to what might have been expected from a review of the literature,[3] the ability of certain of the totally anosmic patients to perceive flavor was not seriously impaired by their loss of the sense of smell. The fact that these subjects were able to score as well as, or better than, some normal controls in the test of flavor suggests that olfaction had not been of paramount importance in their ability to discern the flavor of foods prior to their losing the sense of smell. This does not imply, however, that olfaction is always of secondary importance in the perception of flavor. As was demonstrated by the low test scores of the remaining anosmic patients, loss of olfaction (and perhaps of vision) appears to have been of primary importance in their failure to perceive most flavors. In view of this, it seems that flavor must be a composite of many sensations. Consequently, separating flavor into its various components is difficult. In fact, with the data at hand, we can only speculate as to the make-up of this sensory complex.



Comparison of the flavor-test scores of 5 anosmic patients and 10 normal controls. Thirty-one items were used in the test; a perfect score, therefore, would have been 31. Group A includes seven housewives, three of whom were anosmic and four, normal. All had had considerable experience in cooking. The fifth control (column e) was a middle-aged man with no particular culinary experience. Group B includes four young business women who cooked occasionally. One was anosmic, and three were normal. Group C includes three men, aged 20 to 24 years. One was anosmic, and two were normal. None had experience in cooking.

The many odors that man can distinguish undoubtedly add materially to the enjoyment of foods. The ability to perceive sweet, salty, sour, and bitter sensations in the mouth is one of the most fundamental building blocks of this sensory composite. The widespread location of the taste buds on the tongue, palate, and nasopharynx gives man a maximal opportunity to sample each morsel of food before swallowing it. However, the act of perceiving flavors is not a simple mental combination of odor and taste. All of the somatic sensations experienced in the mouth, nasopharynx, and adjacent structures are important. For example, the temperature end-organs in the buccal cavity are our main source of information concerning the hotness or coldness of a substance at the time of eating. Most Western peoples are accustomed to a hot cup of coffee, and this coffee at room temperature is less palatable, both because of its temperature and because of its lack of aroma.

Pain is another important oral sensation associated with flavor. It prevents admission of noxious substances to the alimentary tract and, paradoxically, adds to the enjoyment of food; for example, no connoisseur of Mexican food would be entirely satisfied with a "bland" hot tamale. The wetness or dryness of foods can alter the flavor considerably, both from the standpoint of the sensation produced in the mouth and from that of the chemical changes within the food produced by hydration or dehydration. Likewise, chemical changes produced in the food by saliva may play an important part in certain instances.

The end-organs of light touch and deep pressure are

utilized by the mouth, alone, together, or in combination with other sensation. Although difficult to analyze, sensibilities that play important parts in the contribution of oral sensations to flavor are vibration and other sensibilities mediated by way of the teeth and bones of the jaws, proprioceptive impulses from the muscles of mastication and expression, two-point discrimination, and stereognosis. Such terms as texture and consistency represent qualities of foods that elicit composites of many of these oral sensations. A food that exemplifies both of these qualities, as pointed out by Crocker,[3b] is taffy. This "chewy" candy is pulled by machines (or by hand) to develop brittleness and fibrous texture, which stimulate more desirable sensations and improve flavor.

One cannot, however, limit flavor to olfaction, taste, and the somesthetic sensations of the oral cavity. Vision, hearing, and the psychological state of the person at the time of eating the food also are important. Vision, for example, plays a prominent part, though one difficult to evaluate, in the perception of flavor. The tests used in this study, on both the anosmic and the control groups, necessarily excluded vision. Hearing enters into the perception of flavor in many ways. Modern advertisers recognize this in their use of such terms as crunchy and crackling, words with strong auditory components. The psychological state of the person at the time of eating may affect his perception of flavor. This psychological component has many facets. Among these, at least in part, are those just mentioned: vision and hearing. Also involved are the memories of previous experiences with the flavor, the interest the person has in food, and the setting in which the food is being eaten.

Thus, extraolfactory sensations often play major roles in the perception of flavor. However, as already has been mentioned, this does not necessarily imply that olfaction is not, at times, of primary importance in this regard. Rather, it suggests that olfaction may be one of the basic elements used in the final cerebral synthesis of flavor and that individuals may vary in their dependence on one sensation (smell, temperature, and taste for sweet, salt, or sour flavors, and so on) or another, in accordance with the sensory patterns learned previously.

One might well apply Mackay's simile[4] of the piano keyboard to these basic head sensations. Each normal individual has the full sensory keyboard at his disposal during maturation. As each person develops his sensory patterns he may learn to use one or another, or a combination, of the various head sensations as the fundamental tone and to employ the remaining sensory modalities as the harmonics of the sensory chord. Should the fundamental tone be lacking and only the harmonics remain, the chord may become a meaningless grouping of tones and the perception of flavor may be lost. Thus the olfactory and extraolfactory sensations appear to play roles of varying importance in the discernment of flavor. One or the other is the fundamental tone, and the remaining sensations serve secondarily as the harmonics. In addition, the possibility that some undiscovered receptive mechanism in the mouth and nasopharynx may enter into the perception of flavor cannot be excluded.

This concept that flavor is a synthesis of many different sensations, in which olfaction plays a role of varying importance, raises certain semantic questions. As the word "flavor," thought to be derived from the old French term *flaur, fleiur*, meaning smell, is defined in the Oxford Dictionary as "the element in the taste of a substance which depends on the co-operation of the sense of smell," this term no longer seems adequate. The less commonly used word "savor," derived from the old French *savur, savour*, meaning "taste," seems more appropriate and we suggest its use in this sense.

Summary

When proved anosmic and normal control patients were studied to determine their ability to perceive flavors, it was found, contrary to popular belief, that several of the anosmic subjects were able to discern flavor. As olfaction was excluded in these cases, it is apparent that the extraolfactory components must at times play the major roles in identification of the flavor of substances. These extraolfactory components are the somatic sensations experienced in the mouth, nasopharynx, and adjacent structures, as well as vision, hearing, memory and the psychological state at the moment of eating. Speculation is warranted on the mechanism of the interplay between the olfactory and extraolfactory sensations in the final sensory synthesis of flavor and on the possibility that some undiscovered receptive mechanism in the mouth and nasopharynx may enter into perception of flavor. Finally, it is felt that the word "savor" is much less attended by the connotation "smell" than is the word "flavor," and would seem to be a more appropriate term in this regard.

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1955 MINT CROP TOPS 1954 IN VALUE

THE value of last year's peppermint and spearmint crops exceeded that of 1954 by $2,057,000, according to final estimates by the Crop Reporting Board of the Department of Agriculture.

This was due largely to higher average prices received by growers, plus increased production of peppermint, which more than offset the decline in output of spearmint.

The peppermint crop had an estimated value of $10,736,000 as compared with $7,683,000 in 1954, while the value of the spearmint crop was $2,471,000 as against 3,467,000 the year before. Prices of peppermint averaged $5.86 a pound against $5.33 in 1954, while the 1955 spearmint prices averaged $4.22 as against $3.86 in 1954. Indiana and Michigan were largest producers.

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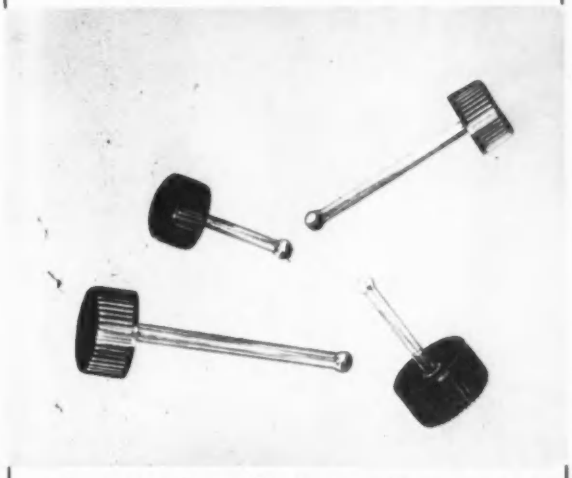

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I-QUIZ

This Month's Quiz Master

Dr. Walter Taylor

Question I. *Is infrared analysis equally sensitive in identifying all organic cosmetic materials?*

Answer. No. We know of no method of analysis equally sensitive to all types of materials. However, the infrared spectrum of an individual cosmetic raw material is considered to be one of its very important characteristics. The material may not be one definite organic compound; in some instances it may consist of members of an homologous series or may contain small amounts of natural impurities. In some cases a record of the infrared spectrum is sufficient for control purposes. On the other hand, specifications covering properties such as viscosity, degree of unsaturation, acidity, aldehyde content, etc., require other methods because the infrared spectrum is only suitable for revealing large differences with respect to these properties. The identity of members of an homologous series of organic compounds such as fatty acids or fatty alcohols may be determined more satisfactorily by the classical methods than by infrared methods. Infrared methods therefore have some limitations depending on the class of organic compounds under consideration.

Question II. *Will interference of certain classes of components affect the identity of other organic materials in a mixture or solution?*

Answer. Although every organic compound has its particular infrared spectrum which may be considered as characteristic as a "fingerprint," we might point out, however, that the spectra of different members of an homologous series of high molecular weight long chain aliphatic compounds will exhibit similarities, for example, stearic and palmitic acids. In such a case other methods of analysis may then be applied to specifically identify the material.

It is apparent that the identity of individual materials may become obscured in a multicomponent organic mixture or solution. In fact it may be possble to substitute small amounts of one or more materials where you have, for example, twelve or fifteen components without changing the spectrum appreciably. This is true in the instance where a strong absorption band characterizing one component obscures the spectrum of another material. In the process of identification in solving a problem of this nature, the same logic is applied as is used in classical methods of analysis, i.e., by reducing interference through separating the mixture. According to the nature of the complex organic mixture, separation may be accomplished by the appropriate technique such as precipitation, distillation, selective extraction by immiscible solvents or chromotography. Infrared spectra may then be used to classify or identify the isolated components.

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TRADE HEIKO MARK

News and Events

American Society of Perfumers To Discuss Premarket Testing

Various methods for premarket testing of fragrances will be discussed at an open symposium of the American Society of Perfumers to be held at the Essex House, Central Park South in New York City on March 21. Experts in the field of market research and representatives of leading fragrance and toiletries houses will discuss available methods for determining consumer acceptability in the fragrance field. Part of the program is to be devoted to presenting some interesting studies on the psychological influence of perfumes. Interested members of the industry are invited to participate in the discussion.

Committee for the meeting is Pierre Bouillette, Andrew Farago, Oliver Marton, Ernest Shiftan, Christian Wight and Everett Kilmer, chairman.

Product Liability Discussed by Cosmetic Law Group

Product liability was one of the interesting topics considered in detail by the Food, Drug and Cosmetic Law Section of the New York State Bar Assn. at its 79th annual meeting January 25-28. The history of the Food, Drug & Cosmetic Law was reviewed in a half century examination of its development to the present time. There were 16 speakers including S. L. Mayham, executive vice president of the T. G. A., who spoke against further amendments of the cosmetic provisions in the federal food, drug and cosmetic law.

National Chemical Credit Assn. Merges with Cosmetic Credit Assn.

The Drug, Cosmetic & Chemical Credit Men's Assn. has been merged with the National Chemical Credit Assn., which is now one of the strongest and largest credit associations in the country.

NBBMA Board of Directors Is Scheduled to Meet

The Board of Directors of the National Beauty and Barber Manufacturers Assn. will hold a breakfast meeting in the Town Room of the Hotel Statler, New York City, at 9 a.m. February 29.

David J. Warner (center), of Fleuroma, president of CIBS, greets guest speaker S. L. Mayham (right) and H. Goulden, executive vice president and scientific director respectively of the Toilet Goods Assn.

Dr. William R. Prindle Addressed Chicago SCC

The February meeting of the Chicago Chapter of the Society of Cosmetic Chemists was addressed by Dr. William R. Prindle, assistant technical director of the Hazel-Atlas Glass Co., whose subject was "Glass Containers: Recent Trends in Manufacturing and Research." He outlined the methods used in the manufacture of glass containers, and discussed current research and development problems.

Dr. William R. Prindle

Dr. Prindle is a graduate of the University of California. He received the Ph.D. degree from the Massachusetts Institute of Technology for research in glass technology and metallurgy.

Very Heavy Ad Budgets May Hold Up Profits Says Mayham

The tendency of a few cosmetic manufacturers spending millions of dollars to promote individual cosmetics has placed the old established companies in a difficult and possibly a dangerous spot S. L. Mayham, executive vice president of the Toilet Goods Assn., told the Cosmetic Industry Buyers and Suppliers at the December meeting of that association.

The question facing the old established firms is whether they can throw the same dollar weight behind one or two of their specialties and keep up the pace of demand, or must they see volume in some of their standard products lost to a few houses who concentrate on specialties and who spend up to 40% of sales on promotion. He questioned whether profit margins, even when quickly obtained, can be maintained against the large budgets for promotion used by these firms.

Mr. Mayham also pointed out that 1955 was the biggest year in the history of the industry.

Hazel Bishop Is Officer Of NY Section of ACS

Hazel Bishop has been elected alternate councilor for the term 1956-1958 by the American Chemical Society's New York Section,

Miss Hazel Bishop

Inc. Miss Bishop has also been chosen by the Women's Council of the Rochester (N. Y.) Chamber of Commerce to speak at a forum luncheon April 25 at the Rochester Chamber of Commerce which will be attended by over 600 of the city's leading industrial and professional men and women. In extending the invitation to Miss Bishop to address the meeting the Women's Council of the Chamber, sponsors of "Women in Industry" stated that Miss Bishop personified all that the Council is trying to project in its overall plan both from a practical and a glamour standpoint. Miss Bishop, who is well known throughout the cosmetic industry, was graduated from Barnard College in 1929 and later attended Columbia University for graduate study. She was president of Hazel Bishop, Inc. in 1950 and 1951 and in 1954 sold out her entire interest in the company. She has been chairman of the social committee of the American Chemical Society New York Section and a speaker before various sections of the Society as well as the Society of Cosmetic Chemists in which she is an active worker.

Recommend FDA Appropriation Increase

President Eisenhower has recommended to Congress that the appropriation for the fiscal year 1957 to the Food and Drug Administration be $6,779,000. This represents an increase of nearly $1,000,000 over the current fiscal year.

Of the total recommended, all but $299,775 would be allotted to enforcement operations. The extra income would enable the FDA to hire about 135 more agents and workers, and to step up its inspection of factories and other establishments from 11,700 to 13,800 next year. The inspection of imports could be expanded from 26,000 lots to 29,500 lots, and samples of foods, drugs and cosmetics obtained from the market for examination would be increased from 36,500 to 44,000.

ASEC Holds February Meeting

A general meeting of the American Society of European Chemists and Pharmacists was held in New York City on February 15. The nominating committee presented the following slate of officers to the membership: F. F. Nord, president; Heinrich Waelsch, vice-president; Henry Goldschmiedt, executive vice-president; Marco Brinholz, treasurer; Ines Mandel, secretary; and Eric Franke, Kurt G. Stern, Carl Neuberg, J. A. Aeschlinen and E. Schlittler, members at large.

Cosmetic Credit Men Enjoy Winter Party

The Drug, Cosmetic & Chemical Credit Men's Assn., which has done yeoman service for the allied indus-

George White (left), and Harold Mix

tries in the past 30 years, held its annual winter party in the Savoy Plaza Hotel, New York, on the evening of January 27. The event marked the first meeting of the National Chemical Credit Assn., with which the association just merged as the Eastern division. Harold E. Mix is chairman of the Eastern division and Fred A. Craine is chairman of the Western division. The combined groups will meet in convention at the Hotel Warwick, Philadelphia, February 23-24. The membership is now comprised of 76 of the leading chemical companies in the country. The organization is serviced by the Fifth Avenue Protective Assn., New York.

At the winter party cocktails were enjoyed while members gathered in groups for informal chats after which the banquet was held. At its conclusion Chairman Harold E. Mix presented retiring chairman George White with a handsome traveling bag on behalf of the association.

At the winter party of the Drug, Cosmetic & Chemical Credit Men's Assn.: Mr. and Mrs. Walter Naber, Mr. and Mrs. Jack Gottesman, and Mr. and Mrs. Robert Otte.

Joseph Lynch, just back from Europe, pauses for a chat with Nat Otte, Joseph Wafer and Edwin W. Kavanaugh during the festivities of the evening affair.

William Mennen, Jr. (left), executive vice president of the Mennen Co., turns over to Col. Edward Eagen, U. S. Olympic Fund Raising Chairman, the specially prepared Mennen Olympic Kit, which contains toiletries for the U. S. Olympic team. The presentation was made on behalf of the firm's employees and of the toiletries industry as a whole.

F. O. Robitschek Is President of Onyx Oil

F. O. Robitschek has been appointed president and chief executive officer of Onyx Oil and Chemical Co. Formerly he was with the Soap Sales division of Colgate-Palmolive Co. In 1945 Mr. Robitschek was sent to Germany by the Technical Intelligence Commission of the U. S. Department of Commerce to study the dye stuffs industry of that country. His findings were published in "Robitschek Dye Stuffs Report." In 1944 he served in Washington as an administrator with the Chemical Bureau of the War Production Board.

Mr. Robitschek is a member of the American Chemical Society, The Chemists' Club of New York and the Sales Executives Club of New York.

Warner-Lambert and Emerson Drug Merger Pends

Alfred E. Driscoll, president of Warner-Lambert Pharmaceutical Co., and Francis H. McAdoo, Jr., president of Emerson Drug Co., have announced an agreement in principle for the merger of Emerson into Warner-Lambert.

The basis for the merger is based on the exchange of one share of Warner-Lambert stock for two shares of Emerson, after the retirement of certain stocks by both companies and consideration of a declaration by Emerson of a 5% stock dividend.

Emerson manufactures Bromo-Seltzer, and two of its subsidiaries manufacture glass containers for the pharmaceutical trade. The Emerson name will continue to be identified with its products, and the operation will be conducted as a division of Warner-Lambert.

It is anticipated that the final merger agreement will be submitted to stockholders of the corporations for their approval during March.

Jeunesse Cosmetics Engages Southeast Sales Representatives

David Kendall Associates of Miami have been engaged as sales representatives of Jeunesse Cosmetics, Inc., for the states of Florida, Georgia, Alabama, Mississippi, North Carolina, South Carolina, Virginia and eastern Tennessee.

Puerto Rico Reports On Expanding Chemical Industry

The Commonwealth of Puerto Rico is currently releasing a research study which publicizes the growing production of cosmetics, perfumes, paints, insecticides and other chemical products by U. S. mainland companies on the island.

Included in the study are the main points of the Commonwealth's special incentives program along with profit outlook for drugs and chemical manufacturing. Among the incentives are no federal taxes, no local taxes for ten years, technical aid, strategic location, and a ready supply of modern multi-purpose factory buildings. Current wage rates are also analyzed.

FTC Charges Denied By Cosmetic Firms

Helena Rubinstein, Inc., and Yardley of London, Inc. have denied Federal Trade Commission charges that they give unequal promotional aid to their customers.

Two other firms, Elmo, Inc. and Hudnut Sales Co., also charged, have not yet replied.

Aromatic Products, Inc. Changes Location

Aromatic Products, Inc., has moved its offices and laboratory from 15 East 30th St., New York City, to new and larger quarters at 235 Fourth Ave., New York 3, N. Y. The new telephone number is ORegon 4-9114.

The new facilities made available by the move will insure continuance of the same high quality of service which has characterized the company in the past.

Mrs. Paul Ames, Gaby Smart, Carmel Myers, Lewis Davis, president of Bonwit-Teller of Philadelphia, and Nick Parker, president of Henri Bendel, celebrate Miss Carmel's acquisition of the U. S. distributorship for Zizanie cologne and perfume from Fragonard of Paris.

Northam Warren Revises Cash Discount Structure

Effective January 1, the Northam Warren Corp. has revised the cash discount structure for both Cutex and Odorono products from 2% 10 days to 2% 30 days.

Fluid Extracting Machine Demonstrated by British Engineers

The E. H. Bentall & Co., Ltd., of England, is currently demonstrating in the United States a machine said to extract existing fluids from any substance. The firm maintains that the machine, which performs efficiently, quickly and cheaply, has opened new possibilities in many industries, including oils, chemicals, drugs, and food preparations. In Britain the Powling Process, which is named after its inventor, W. T. Powling, is supposed to be yielding many valuable by-products in research by chemical and essential oil companies. The machine has extracted protein and carbohydrates from grass and waste green stuffs at such an economical rate that it has opened up an important source of animal feed.

Among applications of the machine is the straightforward extraction of drugs and oils using fractional horse-power and, in most cases, no pre-treatment with heat.

The machine is to be demonstrated in New York, Philadelphia, New Orleans, Houston, Los Angeles, San Francisco, Seattle, Chicago, St. Louis, Cincinnati and Pittsburgh.

At the reception following their wedding, Joe Louis, former heavyweight boxing champion, and his wife are greeted by Edward Sagarin of Standard Aromatics. Mrs. Louis is the proprietor of the Rose Morgan House of Beauty, which has just launched a new line of cosmetics.

Shulton, Inc. Honors Sales Representatives

Charles Williams (left), George L. Schultz

Shulton, Inc. recently held its annual sales meeting, which was attended by the firm's branch managers and sales representatives from this country and Canada. The sales, promotional and advertising plans for 1956 were outlined.

The company has instituted six awards to be presented each year to outstanding sales representatives—a President's award, four branch managers' awards, and a "Rookie Salesman of the Year" award. George L. Schultz, president of Shulton, made the presentation of the President's Award to Charles Williams of the Pacific Territory. The branch managers' awards went to Ned Burns, East; Claude McCabe, Midwest; Johnson Curtis, Pacific; and Reuben Williams, South. Herbert Weishmann of the Eastern territory was chosen "Rookie Salesman of the Year."

Pierre Parchois Addresses American Society of Perfumers

Pierre Parchois, Coty Products Corp., was guest speaker at the February 15 meeting of the American Society of Perfumers.

Mr. Parchois showed a color film which he made recently in southern France of jasmin plantations, and commented on French jasmin, its cultivation and its place in modern perfumery.

Pierre Bouillette, program chairman, introduced the speaker.

Juvenile Court Judge Addresses Michigan Chemists

Honorable Nathan J. Kaufman, Judge, Juvenile Court, was guest speaker at the meeting of the Chemical and Allied Industries Assn. of Michigan in Detroit on January 30. His topic was "You and Your Juvenile Court."

Mary Chess, Inc., Adds Field Representatives

Mary Chess, Inc., announces the appointment of three new field representatives.

Harry T. Patterson covers Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming, and El Paso, Texas.

Charles de Flandre represents the company in Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, South Dakota and Wisconsin.

Sophie Lunsford is in charge of the states of Indiana Kentucky, Michigan and Ohio.

Perfumers' Society Elects Officers and Honors Secretary

Richly deserved honor came to William H. Barlow, one of the pioneers in the organization of the American Society of Perfumers and its efficient secretary since its

William H. Barlow

organization a decade ago, when the association presented him with a $500 war savings bond as a tribute from the association for his years of work and devotion.

The presentation came as a complete surprise to Mr. Barlow, at the end of the January 18 annual meeting. In presenting the bond President Christian Wight pointed out that Mr. Barlow had been one continuous arm in the executive group and his diligence in keeping records had contributed much to the sound position of the association. He expressed the regrets of the members that Mr. Barlow felt that it was advisable to retire from the post but assured the well attended meeting that the association would continue to call on Mr. Barlow for advice. In his acceptance speech Mr. Barlow, somewhat overcome with the surprise, thanked the members for their tribute to him and assured them of his continued interest and willingness to be of assistance whenever called upon.

Prior to the presentation the annual business meeting was held; and the following new officers were elected: Chairman of the board of directors, Dr. Ernest Shiftan; President, Christian F. Wight; Vice President, Pierre Bouillette; Treasurer, Edwin D. Morgan; and director for a three year term, Kenneth H. Walker. Theodore Bumiller Jr., Paul H. Lelon and Maurice A. Meunier retained their offices as directors.

Newly installed officers of the Cosmetic Industry Buyers & Suppliers Assn. at a recent meeting. Left to right: Jack Jordan, recording secretary; Harold Anderson, director; J. William Voit, corresponding secretary; James Beyer, treasurer; David J. Warner, president; Edgar Ellis, director; and William Jaeger, second vice-president of the group.

Roger & Gallet Celebrates 150th Anniversary

Seated left to right: Francois Maitre, vice president; Dorothy Morrison, promotion and publicity director; Guy Rocherolle, president; R. D. Buckalew, vice president of marketing. Standing left to right: Dick Stone; Frank Letteau; Joe Kean; Patrick Dwyer; William Merner; C. R. Johnson, Jr.; Joe Jones; Bill Spence and Frank Poole.

Roger & Gallet, whose original Eau de Cologne was introduced and popularized at the court of Napoleon in the year 1806, is this year celebrating its 150th anniversary. Commemoration of the event will provide the basis for an intensive promotional plan for the entire year. District managers from all areas came to New York City recently for a weekend briefing on the proposed campaign.

Obituary

Fritz Schubert

Fritz Schubert, of Dodge & Olcott Inc., who has been associated with the essential oil industry for many years, died of a heart attack on January 12. He was a member of the American Society of Perfumers and was well known in the trade.

Arthur Klein

Arthur Klein, a member of the staff of van Ameringen-Haebler Inc., died January 9 following a brief illness.

Dr. S. D. Douglas

Dr. S. D. Douglas, senior scientist in the research department of Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp., died in Houston, Tex. on January 15 after a long illness.

Dr. Douglas joined Carbide and Carbon in 1926 after being graduated from Middlebury College and after receiving his M.S. and Ph.D. degrees in chemistry from the University of Pennsylvania. In 1944 he became assistant director of research. Dr. Douglas was a member of the American Chemical Society, the Society of the Plastics Industry and the Society of Plastics Engineers.

Ellery W. Mann

Ellery W. Mann, president of Tampax, Inc., and former president of Zonite Products Corp., died January 15 in Garden City, N. Y. He was sixty-five years old.

H. G. Skinner

H. G. Skinner of National Dry Ltd., London, Ontario, Canada, manufacturers of flavors and beverages, died on December 13.

SPOTLIGHT News...

The most expensive bath tub ever built was owned by George Blumenthal of New York according to the Assn. of American Soap & Glycerine Producers. It was of black and gold African marble and cost $50,000. In view of its beauty one can readily understand the impatience of the owner for Saturday night to arrive. It bridged the long gap from the twentieth century to the time in B.B. (before bath tubs) when man went to the waters for his baths.

Perfume could be used to select a husband or wife according to Dr. William H. Ittelson, professor of Psychology at Brooklyn College. "If the effect of a perfume is the same on the other as on one's self it may indicate an affinity of personalities, inner feelings, likes, dislikes and so on. Sexual references play only a small part in the selection of perfume" he pointed out in a lecture sponsored by Coty Inc.

Sales of Revlon cosmetics in 1955 were $51,600,000, a gain of 54% over the previous year.

Hazel Bishop Inc. reported a net loss of $460,177 and net sales for the fiscal year ending October 31, 1955 of $11,462,020, a drop of nearly $750,000 from 1954 sales. Sales in the last quarter just ended were $4,007,010 the highest quarter in the company's history.

Trade marks and what they mean to you was the theme of an exhibit in the lobby of the Department of Commerce, Washington, D. C. which came to a close after a month's showing, February 10. The exhibit marked the 75th anniversary of this nation's first trade mark law, passed in 1881. More than 600,000 trade marks have been registered since then but less than half of them are still active.

The median expenditure for advertising of cosmetic products is 16.47% of total sales and the median expenditure for soaps, detergents, cleansers and polishers is 6.55% of total sales according to a study made by the University of Illinois and *Advertising Age.*

The Kings Men line of toiletries for men has been added by Helene Curtis Industries, Chicago to its other cosmetics by virtue of a license. The "42" Products Inc. organization was acquired by the Helene Curtis Employees' Profit Sharing Retirement Plan, which licensed Helene Curtis Industries to manufacture and sell the Kings Men products. Hitherto all products sold by Helene Curtis Industries, which last year did a business of $30,000,000, have been developed within the organization.

Infrared spectroscopy to analyze caps used on jars is being used by Chesbrough-Ponds Inc., Clinton, Conn. Not only are the plasticized vinyl coatings on the cap liners analyzed in this way but also the coatings on the inside of tin caps. The objective is to make sure that the quality of the product as it comes out of the container in the user's home is as high as when it was packaged at the plant. Also as improved liners and caps with different coatings are developed infrared analysis is used to screen them for their suitability in packaging.

Over 2000 handerchiefs scented with Houbigant's Quelques Fleurs perfume will be distributed to the women who attend the March 6 fashion show at the Waldorf Astoria Hotel, New York for the benefit of the National Cancer Foundation.

"To Look Your Best—See Your Barber or Beautician" in large colorful posters was the slogan carried on over 2,500 delivery vehicles of the members of the Linen Supply Assn. of America, the national trade group for 1115 linen and towel suppliers and allied firms, during February. Nearly every city was covered by the delivery trucks.

Gold Eye Shadow has been launched by Harriet Hubbard Ayer to match its "Midas Touch" gold hair spray. The golden touch is recommended by the company for red heads and blondes; silver is recommended for gray haired women while women with dark hair may use either.

A dividend of ten cents per share was paid to stockholders of Mary Chess, Inc. January 25 as a result of the continued increase in the company's business.

Portrait of an executive who just made a wise decision.

This gentleman—like you—wants to get ahead in 1956! That's why he decided to get the information he needs to improve his products and increase his sales during the coming year.

Our friend has every right to be happy, because he has just entered his subscription to the *new* AMERICAN PERFUMER AND AROMATICS—"The Magazine of Taste and Scent." He will receive a full year's supply of the successful, business-building ideas he needs to keep up with the pace-setters in the industry.

If this copy of AMERICAN PERFUMER AND AROMATICS is *not your copy* . . . then this would be a good time for you to order your own personal subscription.

SUBSCRIPTION ORDER FORM

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48 West 38th Street
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Please enter my subscription to *the new* AMERICAN PERFUMER & Aromatics, for one year at $4.00.

(Please Note: This rate effective in USA and Canada only. To cover added postage costs, subscription rates in other countries is $10.00 per year.)

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Company _____

Address _____

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Zone _____ State _____

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THERE'S *Design* IN FRAGRANCE TOO!

The perfumer of yesteryear depended for his success solely upon striking a happily different combination of the age-old aromatic materials. Today many fragrance successes are designed and based on the unusual note of a newly discovered aromatic from the laboratory of the research chemist. Upon this start the perfumer, with his artistry and technical skill, will design a fragrance truly original in its beauty. For expert help in any perfuming problem, seek the advice of van Ameringen-Haebler, Inc.

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Van Ameringen · Haebler, Inc.

521 WEST 57th STREET NEW YORK 19, N. Y.

PERSONALITIES

Robert W. Montgomery was recently appointed sales manager of Fritzsche Brothers, Inc. He joined the New York essential oil firm in 1946, and spent the next eight years as sales representative working out of the Philadelphia office. In 1954 he was transferred to the company's headquarters in New York, where he has devoted much of his time to sales problems.

Robert W. Montgomery

Thomas J. LaBounty was elected vice president of Bee Chemical Co.

Frank J. Milo has been named sales representative, specializing in the sale of aromatic and industrial (Alamask) odor control chemicals, by Rhodia, Inc. Mr. Milo's professional background includes association with Givaudan-Delawanna, Inc. where he handled all industrial aromatic chemicals and compounds as assistant to the sales manager of that company's Sindar Corp. Division.

Frank J. Milo

Christian F. Wight, newly elected president of the American Society of Perfumers, has been actively associated with the essential oil and aromatic chemical industry for 21 years. He was graduated from the Columbia College of Pharmacy in 1933 and the following year was a Plaut fellow in Kings College, London. He joined van Ameringen-Haebler Inc. in 1935 as a perfumer and is still associated with that company in the same capacity. He is a member of the Society of Cosmetic Chemists and has been a member of the American Society of Perfumers since it was organized. He belongs to the Kappa Psi fraternity. He resides in Port Chester where he enjoys his two hobbies: pottery and photography.

Christian F. Wight

E. L. Collins, Iodine Sales manager for the Chilean Nitrate Sales Corp., has been installed as president of the Salesmen's Assn. of the American Chemical Industry.

Calvin Berger, president of the New York State Pharmaceutical Assn., will be guest speaker on January 24 at the monthly meeting of the St. John's University Student Branch of the American Pharmaceutical Assn.

Harold L. Janovsky has been appointed director of the Flavor Division of Dodge & Olcott, Inc. An industry veteran of 21 years, well known for both his published works and his varied association activities, Mr. Janovsky has been, for the past five years, technical director of the Virginia Dare Extract Company. He is a member of the American Chemical Society, Institute of Food Technologists, Society of Flavor Chemists and the Flavoring Extract Manufacturers Assn. of the U. S. For the F. E. M. A. he has served as both chairman and member of the Scientific Research committee, chairman of the Food Additive committee, and member of the Industry Panel, National Food Protection Committee, and Vanilla Research Fund committee of the Metropolitan Dairy Technologists.

Harold L. Janovsky

Charles F. Walden has retired after twenty years of association with Thurston & Braidich.

William B. Mason, former Cleveland sales representative of Onyx Oil & Chemical Co., has been promoted to manager of the Chicago district. He will continue to serve his present territory under the jurisdiction of the Chicago office.

William B. Mason

Joseph A. Danilek, president of Mary Chess, Inc., and Mrs. Danilek have returned from a three weeks vacation in Palm Beach, Florida. During the latter part of their vacation Mr. Danilek took the opportunity to call upon some of the Mary Chess accounts in that territory.

William T. Tilden III has been elected secretary of Zonite Products Corp. His new duties are in addition to those as treasurer, a position he assumed in December 1955.

Maurice R. Chez, a director of Max Factor & Co. who formerly headed its Sales Builders' division, has been elected vice-president in

Maurice R. Chez

charge of the company's national sales division.

Leroy R. Root is retiring as sales manager of the Drug and Cosmetic Container division of the Scovill Manufacturing Co. He will continue to serve as a consultant on product development.

Mr. Root joined Scovill in 1919, and was transferred to the New York sales office in 1920. He designed and patented the first mechanical lipstick and developed

Leroy R. Root

many of the cosmetic containers in use today. His first metal containers were sold to small cosmetic companies, many of which are now leaders in the industry.

Gerard S. Fowler has been named vice-president for cosmetic merchandising and advertising of the Lambert-Hudnut division of the Warner-Lambert Pharmaceutical Co. Mr. Fowler was formerly in charge of sales for the company's cosmetic business.

Carl W. Gardiner and **John A. Treat,** both of the Elizabeth Arden Sales Corp., are respectively co-chairman and member of the committee which represents the cosmetic industry in the 1956 Greater New York $3 million appeal on behalf of the National Foundation for Infantile Paralysis.

Philip Smolowe, president of Jean Patou Inc., parfumeur, cele-

Philip Smolowe

brated his twenty-fifth year with the firm on January 13. A leading figure in the perfume industry, Mr. Smolowe became president of Jean Patou in 1952 after serving as vice-president and a member of the board of directors for a number of years.

John J. Ziccarelli has been assigned to the technical sales department of Glyco Products Co., Inc. He is stationed at the New York office and will assist in covering Metropolitan New York, eastern New York State, and northern New Jersey.

Andrew Bela has been appointed plant manager for S. B. Penick & Co. at its Lyndhurst, N. J. plant. He was graduated from the University of Michigan, and has had wide professional experience in the chemicals field.

Alvin E. Peterson and **Chris Christensen,** two veteran employees of Chas. Pfizer & Co., Inc., have retired. Both held their most recent posts with the company in the Chicago sales office. Mr. Peterson, the company's oldest employee from point of service, joined the company in 1908. Mr. Christensen concludes 30 years of service as a key sales representative of the organization.

Harry D. Armitage, who has been associated with Emery Industries, Inc., for 30 years, was honored during the Exposition of Chemical Industries in Philadelphia. Mr. Armitage, who is Emery's New York sales representative, was presented with a 30-year pin by A. W. Schubert, executive vice president. A native of Ohio, Mr. Armitage joined Emery in 1925 as a salesman and established the New York sales office in 1930.

Kenneth D. Caldwell, Max Factor's director of advertising for many years, has been elected vice-

Kenneth D. Caldwell

president in charge of the Hollywood make-up firm's national advertising.

Arthur M. Kelly, vice-president Parfums Weil Paris, Inc. has returned from a two week business trip to the Weil offices in Paris.

Thomas C. Sheffield, vice-president and West Coast manager of the Sheffield Tube Corp., collapsible metal tube manufacturers, has

Thomas C. Sheffield

been chosen the 1956 chairman of the Associate Group of the California Cosmetic Assn. The group sponsors a variety of trade discussions at its monthly meetings.

ANNUAL REPORT

In the past 12 months...

readers and advertisers have seen dramatic changes in *all* of the five Moore ABC publications.

Special articles and new features in each magazine focused on building greater sales power — the most valuable commodity in our growing economy.

Editorial staffs were enlarged to explore new sales frontiers as they develop, and point the way to bigger profits for American businessmen.

Crisp, functional layouts were introduced to step up reading speed for busy subscribers — and to give advertisers new opportunities for paced selling.

What's going on at Moore? Simply this:

In issue after issue, Moore editors are matching the tremendous development of the fields they serve with expansion-minded coverage. Their long experience helps them to weigh the new and untried for industry leaders. Their wide contacts put advertisers close to the payoff point.

Combined sales in the industries covered by Moore now total over $35 billion annually . . . and alert businessmen want *more*. They look to the Moore publications to help them.

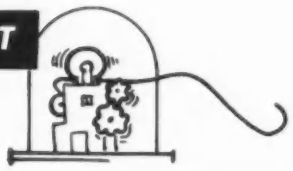
Are these subscribers finding what they need in Moore publications? Here is *their* answer:

what's going on

- *Circulation is ahead of last year for every one of the five publications.*
- *Four of the five publications reached new, all-time circulation peaks in the specific fields they serve.*
- *Renewal percentages — in every case — are up.*

This is an expression of personal confidence and active interest that goes beyond mere numbers. You can't add it up very easily — but you *can* take advantage of it. Advertisers currently are investing over $1 million in these magazines. Are *you* profiting from what's going on at Moore?

MARKET REPORT



Market Is Marked by Firmness . . .

CHEMICALS, namely citric acid, tartrates, caffeine and ethyl alcohol were marked by firmness. The advances recently scored in alcohol, the tartrates and citric acid were fully maintained with reports current about the trade to the effect that the late rise in ethyl alcohol may be extended in the face of a good demand and mounting costs. While the price trend in essential oils was downward in the first month of the new year, suppliers noted a rather rapid recovery in sales following a seasonal letdown in late December.

PRICE CHANGES

ADVANCES	CURRENT	PREVIOUS
Oil ginger	$18.50	$17.25
Oil mace	$5.00	$4.50
Oil sage, Dalmation	$4.40	$4.35
Sandarac gum	$4.25	$3.85
Zinc oxide, NSP	0.17¾	0.17¼
Castor oil, Brazilian	0.14¾	0.14½
DECLINES		
Vanilla beans—		
Bourbons	$5.65	$6.50
Mexican	$8.25	$9.00
Oil sassafras, artificial	0.63	0.65
Eugenol	$2.25	$2.50
Heliotropinl	$3.80	$4.05
Menthol—		
Brazilian	$7.00	$7.40
Synthetic, laveo	$7.00	$7.50
Oil wormseed	$3.10	$3.35
Oil citronella, Ceylon	$1.00	$1.05
Cocoa butter	0.48½	0.53½
Coconut oil, crude, coast	0.10⅜	0.10½
Copra, coast, ton	$145.00	$147.50
Tallow, fancy	0.07¾	0.08¼
Safrol	$1.10	$1.25

Prices per pound unless otherwise specified.

FLURRY IN ORANGE—

Floridian orange oil prices failed to be affected by the spell of cold weather that hit the producing areas early in January. For a time some producers noted a flurry in activity. Consumers fearing that the cold spell would have an adverse affect upon oil production came into the market for larger quantities.

GLYCERINE OUTLOOK FIRM—

There has been some speculation in trade circles regarding a possible decline in refined glycerine prices as the result of a more competitive situation in crude material particularly in the Argentine. The policy of requesting bids for crude was recently discontinued as the result of political developments in the Argentine, and consequently, offerings of exportable surplus were freely being made here at competitive prices. The demand for refined was unusually heavy for January and trade factors were of the opinion that the brisk buying movement if continued should tend to offset the possibility of a drop in refined prices.

COCONUT OIL OUTLOOK—

If foreign demands continue at current levels or improve slightly, the Philippine Republic may ship 5 to 10 per cent more copra and coconut oil into world markets this year than was exported in 1955. December coconut oil exports from the Island reached 7,610 tons compared with 5,688 tons in November, and 6,361 tons in December, 1954. Of this total the United States took 7,100 tons. Copra exports were up 20 percent in December from the previous month totaling 84,884 long tons. Of the December total 32,894 tons were exported to the United States.

DIP IN VANILLA BEANS—

Vanilla bean prices hit a new low level over the past month due to a quiet demand and freer offerings. Bourbon beans were offered at $5.65 to $6.25 per pound while prices on Mexican whole beans dropped to $8.25 to $8.75 per pound.

FORWARD BOOKINGS IN LEMON OIL—

Exchange brand coldpressed Californian lemon oil is again being offered for sale on a contract basis. For the first time in many years Sunkist Growers of California is accepting forward bookings through its distributors, Fritzsche Bros., Inc., and Dodge & Olcott, Inc.

SPICE OILS STRONG—

Several spice oils were featured by a strong tone due to continued high raw material costs. Prices on both mace and nutmeg oils edged upward. Toward the close of last month dealers noted some falling off in sales due to increasing buyer resistance to the high prices. Ginger was likewise strong with quotations registering a rather substantial gain. Clove bud oil steadied following a series of declines in the latter part of last year.

HELIOTROPINE, SAFROL OFF—

Declining prices for ocotea cymbarum and artificial sassafras oils were reflected in safrol and heliotropine. Safrol declined to $1.10 to $1.30 per pound while heliotropine was lowered to $3.80 to $4.10 a pound.

MENTHOL AT NEW LOW—

A series of declines brought menthol prices down to a new low. The natural product from Brazil dropped to $7.00 to $7.10 per pound, and because of competitive conditions, synthetic material made from citronella oil likewise lost ground.

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EVENTUALLY—For better creams, with economy
B-W Lanolin the superior quality puts into your cream that which gives the skin that smooth soft velvety feeling.
B-W Lanolin will never cause your cream to darken, is best by test and contains over 15% free and combined Cholesterol.
No other base used in your cream, equals the merits of B-W Lanolin.
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